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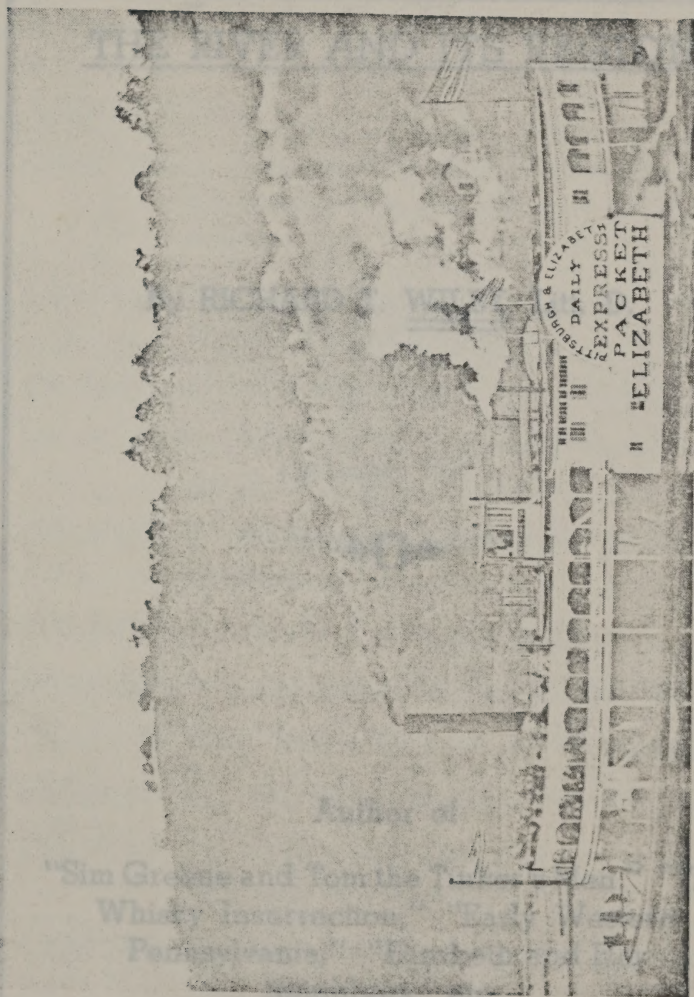
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MONONGAHELA



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MONONGAHELA

THE RIVER AND ITS REGION

By RICHARD T. WILEY, Litt. D.

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BY

RICHARD T. WILEY



Author of

"Sim Greene and Tom the Tinker's Men." "The
Whisky Insurrection," "Early Western
Pennsylvania," "Elizabeth and Her
Neighbors" etc.

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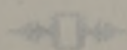
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MONONGAHELA
THE RIVER AND ITS REGION

By RICHARD T. WILEY, LAW. D.

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Author of

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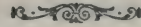
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INTRODUCTION

The earliest recorded history of the southwestern Pennsylvania region centered about its waterways. Even those people of mystery, the Mound Builders, whose occupancy long antedated the Indians, who were found when whites first came to the section, had their habitations at the edges of the greatly swollen waters of the disappearing ice age, and left there their imperishable records in heaps of shells and stones—the former telling of the sustenance of a people and the latter of their sepulture. The Indians pitched their wigwams beside running waters and much of the going about of the tribesmen was by navigating the streams in their canoes. The first known white visitors were French voyageurs on the Ohio and Allegheny, then regarded as one continuous stream, and the rivers bore many pioneer settlers of the region when they came to make their homes in the wilderness.

The rivers have played important parts in all the activities of settlement and development since that time and have contributed greatly to progress and upbuilding. It was not accident that the great accretion of population should be at the place where the two important contributory rivers of the section meet and form the larger one, or that the other chief centers of human habitation in the region should be on the banks of these streams. The rivers have made important contributions to all this growth and development and are continuing factors of the more recent prosperity and upbuilding of the region. Very early the importance of the Monongahela was seen as a means of transportation and the volume of its traffic expanded through all the years that followed, reaching its present vast proportions.

It is more than a quarter of a century since the work herewith presented began to take form in the mind of its

FOREWORD

writer. An actual start in its compilation and writing began at that time, but did not proceed far then. Other matters claimed attention, crowding it out for the time, and later there followed nearly fifteen years in which almost the breadth of the continent lay between the writer and the region of which it was planned to write, along with various sources of information necessary to be consulted.

The project was never abandoned in all that time, but was cherished as something to be taken up whenever circumstances should admit of it. In the meantime, as occasion offered, material was accumulated and filed. Recent years have brought the opportunity desired, and the present work is the result. The aim has been to treat the many interesting phases of the region's history in a popular rather than a critical way—to recount these activities of the several periods in a manner acquired by a lifetime in journalism, rather than tracing origins and authorities for every statement made, and faithfully jotting down reference marks, scattered over the pages, with footnotes corresponding, to back up the authenticity.

In making that statement, no criticism is implied of those faithful plodders who have unearthed and preserved many important facts, and at the same time brought correction of errors in the records which go to make up the history of a region or a nation. Their work has been a valuable one; all honor to them. Neither is it the intention to create the impression that in the present work the effort has been to produce interesting stories rather than accurate accounts of the times and conditions, the events and actors in them. The endeavor has been to be authentic in the portrayal of persons, places, activities, conditions and atmosphere in each period treated, including the Random Notes and Anecdotes at the chapter ends.

Credit is given in the body of the work for all quotations from the writings of others. Footnotes are inserted as deemed needed for convenience or greater clarity. But it was in the nature of the case that the work should take the general form that it did. The writer was born, grew up and passed most of his mature years in a river town where people all around him were engaged in the building

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or running of boats, the producing or shipping of coal. In childhood the familiar conversation of those near to him of two earlier generations had in it much concerning the river and its craft. For his maternal grandfather and two uncles were steamboat builders. One of the uncles was an inmate of the writer's home and both of them, after the steamboat yards became inactive, "followed the river" for years.

As a boy the author played along the margin of the Monongahela, waded and swam in and paddled on its water. As a mere youth he became engaged in the production of a local newspaper which always made much of the river interests, then paramount in that community, and that connection continued through most of a life now somewhat extended. The files of this publication were preserved and carefully indexed, supplying, when called upon, much that memory did not retain, while excerpts from many contemporary publications during that time added further information. But memory, going back to the Civil War period, did furnish much pertaining to the time intervening, recorded in chapters to follow. So, in all that time, much knowledge of the subject in general was absorbed, the exact source of which it might be difficult to set down.

For the earlier periods various newspaper files have contributed in an important way, and very many other publications have been consulted. The Carnegie Library of Pittsburgh has been a mine of wealth in its great collection of newspaper files and most of the other printed works named in the paragraphs to follow, as well as others not named here. But historical libraries also in New York, Philadelphia, Washington, D. C., and other cities have yielded their contributions. Only a few of the more outstanding of the works providing source material can be mentioned here, but others are named in connection with the passages quoted.

Note should be made of Zadok Cramer's "Navigator," a Pittsburgh publication in the early years, devoted to the local rivers, and appearing in different editions from time to time, over a considerable period; Cramer's "Magazine Almanac"; Isaac Harris's "Directory" of Pittsburgh and

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vicinity, also having various editions; George H. Thurston's "Directories" of Pittsburgh and the Monongahela Valley, and also his "Allegheny County's Hundred Years"; Samuel Hazard's "Register of Pennsylvania"; the published annual reports of the Monongahela Navigation Company, including an illuminating history of the company by a stockholder who has been identified as Judge James Veech, telling graphically of the obstacles overcome and the struggles that were part of the effort which gave the Monongahela slackwater navigation; the records of steamboat enrollment preserved in the Federal building in Pittsburgh; Pennsylvania's "State Archives" and "Colonial Records"; Archer B. Hulbert's "The Ohio River"; James R. Alsbach's "Annals of the West"; histories of the various counties in the region, etc. Some other books consulted are among those mentioned in the last chapter of this work.

"Navigation on the Monongahela River," by Mrs. S. Kussart, which ran serially in the "Monongahela Daily Republican" for many months, was an interesting contribution on the subject. It gave evidence of very wide reading and research. Dr. C. Hale Sipe, an authority on early history of Pennsylvania and its Indian inhabitants, placed the author under obligations by furnishing some information concerning these aborigines and various visitors among them.

Dr. Leland D. Baldwin, librarian of the Historical Society of Western Pennsylvania, furnished various references to authorities consulted in preparation of this work, along with his own paper, "The Rivers in the Early Development of Western Pennsylvania," read at a meeting of the organization named. The diaries of Thaddeus Mason Harris, Colonel John May and other travelers of that time, who set down account of their observations and experiences, threw further light on facts concerning the vessels then to be seen on the rivers—flatboats, keelboats and kindred craft—their construction, operation and the parts they played in activities of the period.

All of this reading, and much more, had value in giving background and atmosphere for the author in his work. He accounts himself, likewise, peculiarly fortunate in the

FOREWORD

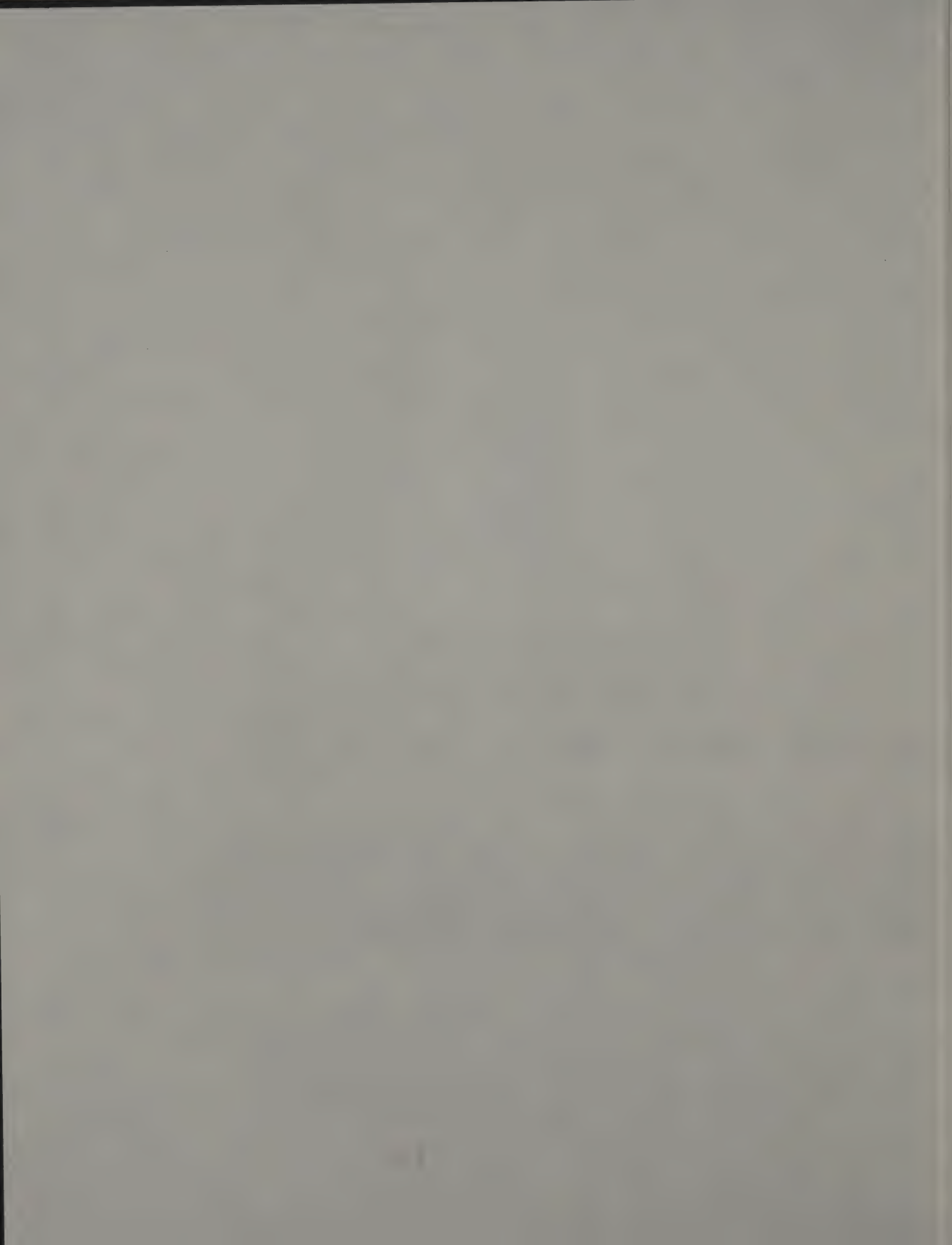
fact that as a young man, many years ago, he had account of many of these things at first hand from then aged men who had their strenuous parts in the operation of these early types of river boats. Thompson Martin of Elizabeth was one of the very early shippers of coal in flats on the Monongahela and personally directed operation of his vessels. John Lambert of the same place, long a marine engineer in the era of the steamboat, pushed keelboats along the rivers in his younger days and aided in building these and other forms of river boats. He told the eager young newspaper man much concerning them and their operation. Captain Joseph L. Hendrickson, whose memories of a long life spent in river activities went back to those times, also made contribution to the author's stock of river lore of early days.

Aside from the river itself, the very interesting history of "The Monongahela Country" has long absorbed this writer. The region was pivotal in directing the march of western expansion and settlement, and few, if any, regions of like extent witnessed more occurrences and developments historically important than did this section of the country in the latter half of the eighteenth century. All of these considerations prompted this effort to bring more forcibly to the attention of the reading public and secure proper appreciation of this river and its region.

Most of the writing of the book in its finished form was done some years prior to its publication date, in the midst of the financial depression. That will explain some references in it to conditions then existing which now seem, happily, to be passing away. Its publication was deferred until this time because it seemed wise to give precedence in appearance to another work of local history which was issued in the closing days of last year.

Elizabeth, Pa., 1937.

R. T. W.



MONONGAHELA

The River and Its Region

CHAPTER I

Characteristics and Distinctive Features—Branches and Affluents—Historic Setting

The Monongahela River, in Pennsylvania and West Virginia, has characteristics which make it notable. These are due in some measure to its natural setting and being, in some to what man has brought to it. Among the things which give it distinction in its status or record of achievement a few are mentioned below.

The region drained by it is one of the most richly endowed in the land in its natural elements of wealth.

Its valley was the scene of most interesting events and developments in the making of early history of the nation, some of these even before national life had its beginning.

It witnessed long activity in the construction of river craft of various types, which proceeded in an evolution culminating in its valley becoming the greatest among all the regions of the country in the production of steamboats.

It was among the earliest of the rivers of the states to be improved by the construction of dams and locks to facilitate its navigation, and the very first to have such a system made complete in its entire main stream by the United States Government.

It witnessed departure of the great pioneer movement for peopling the Midwest of today, and in later years formed an important part in a popular course of travel between the eastern and western sections of the developing country.

It developed activity in mining and shipping of bituminous coal which early gave its region first place in that industry in the entire country, and this industry continues to operate on the river in a large way.

THE JOURNAL OF THE

ROYAL SOCIETY OF MEDICINE

1881-1882

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The Journal of the Royal Society of Medicine is a quarterly publication, containing original researches, clinical observations, and reports of cases, and is published by the Royal Society of Medicine, 11, Bedford Square, London, W.C.1. The Journal is published by the Royal Society of Medicine, 11, Bedford Square, London, W.C.1.

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It is the greatest of all the rivers in the United States in the total of its freight tonnage.

It is one of the chief centers of the greatest industrial district to be found, as manifested in the output and moving of commodities, raw and finished.

The Monongahela is one among the very few of important rivers in the United States whose general course is towards the north, and in a number of particulars is outstanding among all of these. Other rivers having the same general course include the St. John's, in Florida; the San Joachin, in California; the Willamette, Snake and Des Chutes, in Oregon; the Big Horn, in Montana and Wyoming; the Red River of the North, flowing between Minnesota and the Dakotas, and into Canada.

The whole length of the Monongahela, including either one of the two streams which unite to form its main stem, well exceeds two hundred miles. The stream known as Tygart's Valley Branch is 118 miles long, while that which is called West Fork is 94 miles. Though the shorter of the two, the West Fork is usually designated by map makers as a part of the main stream of the river. One engineer who made a survey of the stream for the United States Government speaks of "the Monongahela and the two rivers which form it." Furthermore it is declared that while the Tygart's Valley Branch is the "parent stream," the West Fork is the logical one for government improvement because of its sluggish flow and less fall. This work will regard the Monongahela proper as the stream resulting from the uniting of these two branches.

The two tributary streams named are wholly within the State of West Virginia. They flow through a region which was heavily timbered and from early times has witnessed extensive lumbering operations, logs having been floated down them in great quantities in times of freshet. The difference in character above noted marks almost their entire extent—the West Fork, with little fall and passing largely through an open country, lending itself to slackwater improvement, while the Tygart's Valley Branch plunges and roars over and around rocks, and falls many feet in its passage.

This fact made the stream last named unfit in much of its course for boating operations of the earlier types, considerable activity in which was seen on the others of the related streams, as will be noted later. It made logging operations exciting and dangerous in the extreme. Winding its sinuous way through the mountains for much of its course, it presents many scenes of picturesque beauty. From the junction of these branches the main stream flows about 128 miles, 36 in West Virginia and 92 in Pennsylvania, joining with the Allegheny at Pittsburgh to form the Ohio. In its course from the mountains of West Virginia to the head of the Ohio, the waters of the Monongahela are swelled by those of many smaller streams, two of which are of sufficient importance to justify their being called rivers. Of these the Cheat is wholly within West Virginia except less than two miles, its junction with the main stream being that distance within the limits of Pennsylvania. It is the longest of the streams tributary to the Monongahela, nearly 160 miles, and enters the main stem at Point Marion, 90 miles from the mouth of the larger stream. Its course lies largely through mountain gorges, and it partakes much of the nature of the Tygart's Valley stream, unfitting it for improvement by dams and locks for navigation.

The Youghiogheny River, though about 30 miles shorter than the Cheat, is generally rated the chief affluent of the Monongahela, because of its greater drainage area, volume of water carried, commercial uses and possibilities. Its upper reaches are largely among the mountains of West Virginia, Maryland and Pennsylvania, but its lower stretches are in more open country. It has an average fall of nearly 18 feet to the mile from its source to McKeesport where, 15 miles above the mouth of the Monongahela, it unites with that stream.

Note has been made by individuals, commercial organizations and government agencies of potentialities in these affluents of the Monongahela for commerce, hydro-electric and other industry, flood prevention and utilization of stored water through periods of drouth. These, with account of some of their earlier and present activities in various spheres, will have further mention in subsequent parts of this work.

Besides the rivers named, the Monongahela is fed by many smaller streams along its entire course. Chief among these are Turtle and Peters Creeks, emptying within Allegheny County; Mingo, Pigeon and Maple Creeks, in Washington County; Ten Mile Creek, dividing the county last named from Greene; Redstone, Dunlap's, George's and Little Redstone, in Fayette County; Muddy, Whiteley, Dunkard and Little Whiteley Creeks, in Greene County—all of the foregoing streams emptying in Pennsylvania.

In West Virginia the principal affluents, besides the rivers named earlier, are Decker's, Cobun's, Booth's, Camp, White Day, Little, Pritchett's, Pharaoh, Paw Paw and Buffalo Creeks. The contributing rivers have some important affluents, and there is a large number of runs and brooks flowing into all of them as well as into the main stream, in this exceptionally well watered region.

The various activities and developments to which reference has been made have been chiefly in the Pennsylvania portion of the valley. The course of the river through this state in its natural condition was largely a succession of pools and riffles. The stream had made its course between the hills from 400 to 600 feet high in many places. At some points these closely skirt the stream and rise abruptly from it; at others they sit back at a distance, with level bottom lands and in many stretches a secondary bench of hills intervening—all the plainly marked evidences of operations during the age of ice and the period of flood succeeding.

This formation provided ideal terrain for the farming operations which formed an early activity in the valley, later sites for the many cities and towns, with their homes, places of business and manufactories, now making almost a continuous city for many miles in its lower reaches. The sinuous course of the river makes a fairly even distribution of town sites on its two sides, with almost continuous alternation.

The valley of this river has long been noted for its scenic beauty. In the palmy days of the steamboat as a means of transportation of passengers, this feature brought it wide fame and attracted many travelers, who were wont to compare it with the Hudson, the Rhine or other streams noted for their charm of scenery. In its virgin state it was

heavily forested with a growth of great oaks, walnuts, maples, poplars, hickories, sycamores, locusts, elms, gums and a host of other arboreal giants. The tops of these were often laced by vines, while willows and other growths of smaller species lined the edges of the stream—in summer a vast blanket of greenery and in autumn a riot of color.

When, in the mid-years of the last century, the forest had in part been succeeded by cultivated fields, growing orchards, farm homes and, here and there, villages nestling on the river's edge, the scene was changed somewhat but its charm in nowise lessened. That was the period of the steam packet's supremacy, when throngs of passengers moved along on the steamers, including many notables, all charmed by the beauty of the gliding panorama, as viewed from the decks of a palatial boat; and when some others who were to become notables were playing along the stream.

This charm still remains in much of the valley's upper stretches. In the lower portion the denuding ax, the depositing of mine waste and mill offal, the smoke and grime of industry and the withering breath of noxious gases from myriads of factory chimneys have sadly marred the scene. But, wherever she can, Nature is making a brave effort to overcome these deleterious results of man's disfiguring touch by covering the hillsides with a second growth of forest.

The name Monongahela is of Indian origin and there is wide agreement among etymologists that its significance is "the river with high banks which fall in." The pertinence of this definition is still evidenced by what may be seen to-day, when the alluvial bottom lands crumble and slide down in flood times or when cross currents are created by piers and other structures erected in the stream. In 1828 Edward F. Gay, an engineer, by direction of the Pennsylvania Legislature, made a careful survey of the river, to aid in determining its suitability for canalization. In his report this language was used:

The banks of this river are, for nearly the whole distance examined, of a slippery nature. This characteristic is exhibited in the face of the hills, to a dangerous extent. * * * The construction of a towing path along the river would also be attended with extraordinary expense: indeed, so strong is the propensity of its banks to

slip, for its whole extent, that the practicability of constructing a permanent towing path on either side may be doubted.

George Washington quotes in substance the above definition for the river's name, in the journal of his initial visit to the stream in 1753, and, along with Christopher Gist, who accompanied him, gave spelling that is accepted as correct today, though the latter, in entries only shortly before, had spelled it Mohongeyela and Mohongaly. Hugh H. Brackenridge, in the "Pittsburgh Gazette", July 26, 1786, wrote: "The word Monongahela is said to signify, in some of the Indian languages, the 'Falling-in-Banks,' that is the Stream of the Falling in or Mouldering Banks." Cramer's "Navigator", in 1811, gives the same definition.

Wide diversity in spelling the name is found in records of that time, before it and in some cases later. Conrad Weiser, firm friend of the Indians and versed in their speech, in 1755 spelled it Monongehelo and Minaugelo in writings which are preserved in the "Colonial Records". Reverend Charles Beatty, pioneer Presbyterian preacher, who arrived in Pittsburgh in 1766, wrote it Moccongahela. The late Colonel Chill W. Hazzard, for many years editor of the "Monongahela Republican" and friend of the present writer, consulted various authorities on the origin and form of the river's name, and set forth the results in his paper. That fixed interest in the subject for the present author and he has followed it as occasion offered since then. He was fortunate also and was aided in knowing one state librarian intimately in the person of Dr. George P. Donehoo, and having correspondence with two others—William H. Egle and Frederic A. Godcharles. All of these pursued this subject and made contributions to it in their writings.

Their sources of information were largely early maps of the region, some of them printed in this country and others in Europe; documents preserved in the "Colonial Records" and "Pennsylvania Archives", with various other works of reference, correspondence and diaries of the period, etc. All of these combined in giving a surprising number of forms of spelling the name of this stream which cannot be followed in detail here. Suffice it to say that they all began with the letter M and some of them did not have much more in common.

The name, of course, was not spelled in any way by the Indians among whom it had its origin, but John Heckewelder, Moravian missionary who labored among the Delawares in Western Pennsylvania and Eastern Ohio, as these states are now constituted, said it was a word in their tribal language, had the significance already given, and, as pronounced by them, he rendered it Menaungehilla. One authority quoted as Kelton says it is made up of the Delaware "menonawan," meaning digging away shores, and "helo" or "hello," meaning running water. The accepted pronunciation today, in its own region, is Mon-on-ga-ha-la, with secondary accent on the second syllable and primary accent on the fourth, though Mon-on-ga-he-la and Mon-on-ga-hel-a are sometimes heard from persons of usually correct speech, the accents being still as above noted.

The valley of this stream and the parts adjacent thereto became soon after white men came to know these, and particularly in the latter half of the eighteenth century, the scene of occurrences which were alike thrilling to their participants and epochal historically in their outcome. These involved warring among Gallic, Anglo-Saxon and aboriginal races for possession of the land; inter-colonial strife between some of those who ejected the French; a long reign of red horror before, during and after the Revolutionary period; dissension and revolt against Federal authority before it had become firmly established. But it will require other chapters to set these things forth.

A Goodly Land

Nature has been lavish in the bestowal of her gifts to the region of southwestern Pennsylvania. It is a goodly land, with its mineral wealth, its productive soil, its natural means of transportation. Truly we must go back far beyond any of man's records to get all of the story. The record of its rocks tells interesting things of its distant past—long ages of many successive changes. The dry land of one period was covered with water in another, these changes being repeated again and again. Slow shifting of the poles brought in succession radical changes of climate, varying from tropic heat to Arctic cold.

Pounding sea waves made and laid down vast masses of sand, later hardening into rock. When strongly impregnated with pulverized shells of myriads of sea creatures, limestone resulted. Dense tropical vegetation, growing in soggy soil, fell down and piled up through succeeding ages and then, under pressure of rock-forming deposits, became coal. Stupendous glaciers gouged deep valleys in their courses, these being further sluiced by torrents of water. In the chemistry of Nature, which gave us the various ores, did vast deposits of the remains of creatures of the deep give us also petroleum and natural gas? Who knows?

Poetic Indian Names of Streams

The Indians gave names to all of the streams of the region drained in the gathering of the waters for the forming of the Ohio River, and these designations were always descriptive of some feature or characteristic of the objects to which they referred. A number of these musically sounding appellations have been retained. Of this character are the names of eleven streams whose waters are finally gathered at the junction of the principal two of them at Pittsburgh. The first five of these are sufficiently important to be called rivers and the others are considerable creeks: Monongahela, Allegheny, Youghiogheny, Kiskiminetas, Conemaugh, Sewickley, Loyalhanna, Mahoning, Tionesta, Conewango, Oswaya.

CHAPTER II

"The Monongahela Country" and Some of Its Early Visitors

So far as a most searching investigation reveals, John Frazer, Scotch trader with the Indians, was the first white man to build his cabin and establish himself as a resident of the Monongahela Valley—certainly the first in sight of that stream in Pennsylvania. It was to the right of Turtle Creek, a few rods above its junction with the Monongahela River, in the present town of Braddock, and on ground now covered by the great Edgar Thomson works of the Carnegie-Illinois Steel Company.

There the youthful George Washington and the companions of his first journey into the wilderness of the present southwestern Pennsylvania found Frazer when they had come that far in their mission of protest from Governor Dinwiddie of Virginia, as representative of British interests, against French occupancy of the region. It was in the late autumn of the year 1753. Washington's party consisted at this time of seven persons besides himself, but was soon to be augmented by a few friendly Indians.

First of his companions in importance was Christopher Gist, surveyor and experienced woodsman, who had penetrated this region three years before on a mission to the Ohio Indians, and a year later than that came on a prospecting tour, to locate lands for The Ohio Company, an organization of Virginians with a British charter. Another was John Davidson, an Indian interpreter. A member of the company was Captain Jacob Van Braam, Dutch soldier and French interpreter. His qualifications for discharging the duties of this latter post was laid open to serious question when, in the following year, he permitted Washington to sign articles of capitulation at Fort Necessity, written in French, in which it was set forth that the American commander and his men had "assassinated" the unfortunate young French officer, Jumonville. The other

THE HISTORY OF THE

REIGN OF THE EMPEROR OF THE ROMAN EMPIRE

FROM THE YEAR 1800 TO 1810

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four of the party are named by Washington as Curren and Quire, Indian traders, with Stewart and Jenkins, all of these given in his record as "servitors."

But if Frazer's cabin was the only one having outlook on the placid Monongahela at that time, it was not the only home of a white man who claimed the name of that stream in describing his place of residence. Gist had that same year taken up a tract of ground in the neighborhood of the present Connellsville, which is on the Youghiogheny, and there built a home for himself and family. An entry in Washington's diary a few days before that noting his arrival at Frazer's says: "We arrived at Mr. Gist's at Monongahela," this notwithstanding the fact that the river named was sixteen miles away! The apparent inconsistency is removed when it is known that at that time and for years afterwards the whole region of country was known for the river which traversed it. Southwestern Pennsylvania in general was "The Monongahela Country."

In his first visit to the section Gist approached by the valley of the Allegheny River, having crossed from the Potomac to the headwaters of the Conemaugh. This and the Kiskiminetas and Allegheny he followed down to Shanopin's Town, named for the chief of the Delaware Indian band inhabiting it. The village was on the left bank of the Allegheny, about two miles above its mouth, and within the limits of the present City of Pittsburgh. The Allegheny and Ohio were then considered one continuous river. Gist's diary tells that on leaving the Indian town he crossed the river, passed over what is now the upper portion of Pittsburgh's North Side district and came out on the Ohio some distance below, then proceeded down along that stream. His record in that part makes no reference to the Monongahela, and by the course he took he could not see that stream.

Whether or not he knew of the location of the river then, he was to become well acquainted with it later. On this first trip he made a survey of much of the Ohio valley and that of the Kanawha, returning to his home from the latter through the wilds of western Virginia. In the following year, on the occasion of his second journey to the region west of the mountains, he remained through the succeeding winter. This time, in reaching the section, he

crossed the mountains from the headwaters of the Potomac to those of the Youghiogheny. This course was by a path which had been pointed out by Nemacolin, a Delaware, whose home was on the Monongahela, at the site of the present Brownsville. Concerning this path, Gist's diary records: "This gap is directly on the way to Mohongaly and several miles nearer than the traders commonly pass and a much better way."

It had its difficulties, however, for Gist's account tells that for a considerable distance they had to cut their way through a laurel thicket "to middle fork of Youghyaugh-gaine." But difficulties, topographical and orthographical, were bravely met by Gist. His description of the valley of the Monongahela is probably the earliest that is on record and is interesting:

We searched the land several miles around and found it about fifteen miles from the foot of the mountains to the River Mohongaly, the first five miles of which, east and west, is good level farming land, with fine meadows, the timber white oak and hickory. The same body of land holds ten miles north towards the mouth of the Youghyaughgaine. The land nearer the river for about eight or nine miles wide and the same length is much richer and better timbered with walnut, locust, poplar and sugar trees, but is in some places very hilly, the bottoms upon the river one mile and in some places near two miles wide.

"Wide," as he viewed it, must have been along the stream, for there are no river bottom lands bordering the Monongahela that are as much as a mile from the stream to the first hills. Gist's journal then tells of visiting an Indian village, crossing the Monongahela and proceeding on to the Kanawha. This time an extensive survey of the Ohio Valley was made for The Ohio Company, and the return journey was not undertaken until the following spring. Under date of March 12, 1752, the diary has this note:

I set out for the Mohongaly, crossing it upon a raft of logs, from whence I made the best of my way back to the Potomac. * * * Am of the opinion the Company may have a tolerable good road from Wills Creek to the upper fork of the Mohongaly from whence the river is navigable all the way to the Ohio for large flat-bottomed boats. The road will be a little southward of west, and the distance to the fork of the Mohongaly is about seventy miles.

"Wills Creek" designates the present Cumberland, Maryland. By the "upper fork" of the Monongahela the

main stream evidently is meant, the Youghiogheny apparently being regarded as the other "fork." The path of Nemacolin was that connecting the headwaters of the Potomac with the point where the junction of the two rivers forms the Ohio. Over this path Gist had brought Washington and over it two years later the latter was to guide Braddock. Today much of it is followed by that great highway traversed by millions, the National Road.

Before leaving the cabin of Frazer, something may be said of its pioneer occupant. He was a gunsmith by trade and gave attention to the activities of that occupation besides carrying on trading with the Indians. Some years before thus finding him on the edge of the Monongahela, he had established himself at the Indian town of Venango on the Allegheny, now the City of Franklin. When, in 1749, Celoron, with his French soldiers, swept down that stream, to proclaim possession of the Ohio Basin for his king, he ordered all whites owing allegiance to Great Britain to depart from the territory. The Indians with whom Frazer dwelt protested this expulsion, so far as it pertained to him, and the speech of one of the chiefs has been preserved. He said:

Consider, my father, the situation in which we are placed. If you compel the English to retire, who will minister to our wants, and in particular, the blacksmith, who mends our guns and hatchets? We shall be forced to remain without succor and shall be exposed to the danger of dying of hunger and misery on the Beautiful River.

The "Beautiful River" was the Ohio, so called by the French, of which the Allegheny was then deemed to be a part, and the blacksmith was Frazer. But the French commander was obdurate, and the friend of the Indians had to go. It would seem that he was unwilling to stay banished, for after the French had passed he reappeared on the scene and his presence is noted at Venango as late as the spring of 1753. But another expedition of the French down the Allegheny soon thereafter led to his second expulsion. He went to the valley of the Monongahela, where Washington found him a few months later. There, still within the asserted French domain, he sat down to watch and wait. After Washington left him he was heard from further in the stirring times soon to follow.

So much has been written of the struggle between the French and British for possession of the Ohio Basin, that

no attempt will be made to go into it at length in this work. Instead, only the high points of the contest, as it touched the Monongahela Country, will be noted.

Washington and those accompanying him proceeded to Verango, where they found a force of French soldiers under command of Captain Joncaire. This officer was domiciled in the log house at the mouth of French Creek, from which John Frazer had been driven. Joncaire referred Washington to his superior in command, Captain St. Pierre.

The party pushed on and found St. Pierre at the recently established Fort Le Boeuf (The Buffalo), on the site of the present town of Waterford, in Erie County, and the message from the Virginia governor was delivered. The French commander received Washington courteously, but gave him no message to carry back to indicate that the course of the French would be changed in any particular. After various adventures, which included two narrow escapes from death, and all the hardships incident to such a journey at that period, in the middle of winter and over mountain paths, Washington arrived again in his native Virginia. Before proceeding with any discussion of succeeding events, some other early visitors to the Monongahela Country will be introduced briefly. It is not claimed that this list is a complete one of all such.

The first white people to see the Monongahela River and the country adjacent to it would seem to have been traders with the Indians or messengers sent among them on various missions. Hanna's "The Wilderness Trail" tells of a party of twelve men sent from New York by Governor Fletcher in the fall of 1692, to accompany a party of visiting Shawnees back to their home in the far west, which at that time was the Ohio Valley. The party was under command of Arnold Cornelius Viele, described as "the Albany Dutchman, interpreter and trader." The account continues: "This man and his companions probably were the first known white men to visit or explore the country between the Susquehanna and the Ohio Valley."

In the years following traders with the Indians pushed into the western wilderness from time to time, bringing trinkets of various kinds which the red men were glad to accept in exchange for furs, moccasins and others of their

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products. On occasions messengers were sent by governments of the white men in the East in their dealings with the Indians, and in time came missionaries in an effort to bring Christianity to the aborigines.

The French sent a number of military expeditions down the Allegheny and Ohio Rivers from Canada in the eighteenth century. A few rather obscure allusions are found to such an enterprise supposed to have moved in 1729, but details are lacking. But one such, ten years later, is well authenticated. This, composed of 442 men, soldiers and Indians, passed down these rivers and the Mississippi in 1739. Its object was to reinforce the French in what is now the State of Mississippi, in a conflict with English traders and Chickasaw Indians.* Celoron and his force passed down in 1749, and the French inaugurated their measures for checking British occupancy of the region. Their later moves for building a chain of forts along the Allegheny and Ohio brought Washington and his companions with the protest of the Virginia governor, earlier referred to in this chapter.

The journals of both Celoron and his chaplain, Pere Bonnecamp, tell of the stop at the Pittsburgh site, where was met not only Shannopin and his people, but Queen Aliquippa, who had her home soon after at the point where the Youghiogheny empties into the Monongahela, site of the present City of McKeesport. Celoron also mentions encountering there six English traders who were sternly ordered to move, but, strangely makes no mention of the Monongahela, the largest stream he had encountered in his passage down the rivers, though he passed right by its mouth.

Chief Shannopin and his people in those years had other visitors whose names figure prominently in the records of the time. Threatened occupation by the French led the Pennsylvania provincial government, as well as that of Virginia, to cast anxious eyes over the region. Each was thus early putting forth claims of ownership and control of it, and later this was to bring a situation of much tenseness between them.

* Hanna, "The Wilderness Trail;" "Canadian Archives" (1905); "Ohio Archaeological and Historical Quarterly," October, 1908.

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The journals of both Colonel and his chaplain, Peter Bannerman, tell of the stop at the Pittsburgh site, where was met not only Shannopin and his people, but Queen Aisiquip, who had her home soon after at the point where the Youngsborough empties into the Monongahela, site of the present City of McKeesport. Colonel also mentions encountering there six English traders who were sternly ordered to move, but strangely makes no mention of the Monongahela, the largest stream he had encountered in his passage down the river, though he passed right by its mouth.

Chief Shannopin and his people in these years had whose names figure prominently in the history of the time. Threatened occupation by the French led the Pennsylvania provincial government, as well as that of England, to cast anxious eyes over the region. Each was keenly putting forth claims of owners and control of the land. This was a time of a situation of much tension.

Historical Society, October, 1900.

Colonel George Croghan, a prominent frontiersman, was Indian agent for the Penns, and was sent in the autumn of 1750 into the basin of the Ohio to learn what he could of the movements of the French, and to sound out Indian loyalties. He was accompanied by Andrew Montour, half-breed interpreter. Christopher Gist, who was there at the same time, on his first visit, met these, and they used their efforts jointly to try to enlist the support of the tribes in the struggle which it was felt was impending. These were visitors at Shannopin's Town, and Croghan was probably there two years before when he is known to have engaged in a conference with the Indians at Logstown, on the Ohio, some miles below.

At least one other British subject was there before Gist and Croghan met. This was Conrad Weiser, of German birth, long a resident among the Indians and adopted into one of their tribes. He became a confidential messenger and interpreter for the province of the Penns among the Indians, participating in many of the treaties between the races. He was at Shannopin's Town as early as 1748, where he dined August 27, Queen Aliquippa being of the party. This was on the occasion of an important conference with Indian chiefs at Logstown, referred to in the last paragraph. It was at about the site of the present Ambridge and was the scene of many councils of the two races as well as of the Indians of different nations.

Shannopin's Town had one white visitor much earlier than any of these, who left record of his sojourn there. This was James Le Tort, trader, who was there in 1731, and he gives the interesting information that the place was the home of sixteen families, with fifty men.

The Great Forest

A vast forest stretched for many miles west of the mountains and south of the lakes for other many miles, but much of misconception exists concerning its character. Francis Parkman, in his notable work, "The Conspiracy of Pontiac," gives this vivid word picture of the region as it was in 1763: "One vast continuous forest shadowed the fertile soil, covering the land as the grass covers the garden lawn, sweeping over hill and hollow in endless undulation,

burying mountains in verdure, and mantling brooks and rivers from the light of day." Professor Archer Butler Hulbert, in his fine work, "The Ohio River, a Course of Empire," has this to say on the same subject:

What may well be called the Black Forest of America stretched from the Alleghenies to what is now Central Kentucky and Indiana; a line drawn along the summit of Laurel and Chestnut ranges of the mountains will mark, in a loose way, the eastern boundary of this great forest, and a line drawn through Lexington, Kentucky, and Indianapolis, Indiana, will not be far from its western boundary. Speaking generally, "a great woods" lay between these limits; to the eastward the forests were, of course, very dense too, but they were broken up there by what were known as glades in which the giant trees gave way to long grasses where deer revelled and where pioneers first settled; to the westward of the Black Forest lay the prairies. * * *

The Black Forest has most frequently been characterized as a "pathless wilderness" and a "howling wilderness"; these words probably have occurred more frequently than any others in American historical writing touching the subject of the western forest lands. Both expressions are misleading if not inherently false. * * * Of the prominent characteristics of the old forest the two perhaps most conspicuous were the paths through it and the silence that reigned over it.

The writer then explained that the woods were traversed by a network of deer paths, buffalo roads and Indian trails, and continued:

The most impressive characteristic of the old forest was the absence of undergrowth; this could not live without sunlight, and the sunlight could not pierce through the dense overgrowth. This density of treetops was, also, an impressive feature of the old forest, since almost every tree was loaded with vines, especially those of the grape; these vines revelled in the sunshine found at the treetops and ran riot from one tree to another. It is difficult to tell what a "howling wilderness" might be unless it be a wilderness infested with beasts that howl; wolves howled in the old Ohio Valley but the forests as a rule were marvelously silent—a silence intensified tenfold when now and then the howl of a hungry wolf broke its deathly reign.

CHAPTER III

The Beginning of a Great City

The early years of the last half of the eighteenth century witnessed occurrences and developments in the Monongahela Country of vast import, for they set in motion operations which mightily affected the lives of millions in two hemispheres. At the same time the course of history was influenced in a profound way by results of the struggle here witnessed, and there came training for one young man which did much to fit him for the leadership and responsibilities of a later struggle, out of which came a mighty nation.

George Washington, at the age of twenty-one years, we have seen on an important diplomatic mission, very closely affecting the region under consideration. He discharged well his duties in that particular, and the diary kept by him as the basis for the report he would bear back to the official who granted him his commission shows that at the same time he kept his eyes open and gained important knowledge of the region through which he passed.

Thus we find him when he saw the junction of the Monongahela and Allegheny Rivers, making note that "the land in the fork I think extremely well situated for a fort, as it has the absolute control of both rivers." But he went further in his observation of the situation thereabouts and in his conclusions jotted down. The Ohio Company, which seems to have been rather closely tied up with the colonial government of Virginia, already was planning erection of a fort thereabouts and the location favored was on the Ohio River, at the mouth of Chartiers Creek, about two miles below the "Point." He gave that place careful examination also and the conclusions noted by him have special interest in the study of a local waterway such as this work. Concerning it he wrote:

My curiosity led me to examine this more particularly, and I think it greatly inferior, either for defense or advantages, especially

the latter. For a fort at the forks would be equally well situated on the Ohio and have the entire command of the Monongahela which runs up to our settlements and is extremely well designed for water carriage, as it is of a deep, still nature. Besides, a fort at the forks might be built at much less expense than at the other place.

Nature has well contrived this lower place for water defense; but the hill whereon it must stand being a quarter of a mile in length, and then descending gradually on the land side, will render it difficult and very expensive to make a sufficient fortification there. The whole flat upon the hill must be taken in, the side next to the descent made extremely high, or else the hill itself cut away. Otherwise the enemy may raise batteries within that distance without being exposed to a single shot from the fort.

The British were losing no time in moving for occupation of the land, for Washington on his way back, after delivery of his message to the French, met the advance guard of this occupation in the form of a number of men, with seventeen horses loaded with materials and stores for the fort to be built. The next day he met a number of families going out to settle. These were among the earliest pilgrims in a mighty movement of settlers into the Monongahela Country and the regions beyond. The Ohio Company was making an early start towards fulfilling the conditions of having one hundred families settled on lands in the Ohio Basin, under which the grant of land to that concern was made.

Captain William Trent was in command and he was authorized to recruit a company of militia, which was then in process of formation. In view of what Washington had written in his diary, we can readily imagine him giving Trent his view of the proper location of the fort that was to be. Certain it is that when Trent got ready to begin the building of the fort, a few weeks later, it was located at the junction of the rivers! Washington's foresight had selected the proper place for defense, and doubtless he had vision of some of its possibilities as a rallying point for extending of operations in opening the new country. But he could never have envisioned the mighty city that would arise there, to be the gateway of a wondrous western expansion!

Trent's first task in the new country was the erection of a store-house for The Ohio Company at Redstone Old Fort on the Monongahela (site of the present Brownsville). Beginning thus early, this became and long continued a

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Trent's first task in building the fort was to build a store-house for the company. This was done on the long narrow lot which he had secured at the junction of the rivers.

most important point on the river. An outcropping ledge of red rock supplied the first part of the name applied to the place and the remains of a prehistoric structure was the "old fort."

The building erected there was the second such entrepot of the company, one having been built a little earlier at Wills Creek. On completion of the one at the Brownsville site the little force moved down the river to its mouth and the work of building Fort Trent was begun there. Trent then had about forty men in his company, with John Frazer as lieutenant and Edward Ward as ensign. That was in January, 1754.

Trent returned to Wills Creek, to gather a further force and supplies, and the work proceeded in his absence. Evidently every move of the contending forces was being closely watched, each by the other. We wonder at the speed with which word traveled in those days, in the western wilds and lacking present day means of communication. But there were skulking watchers in the forest and swift runners carried word. The French in the upper Allegheny Valley were apprised of the activities at the junction of the rivers, and Captain Contrecoeur was dispatched with a strong force in opposition.

Lieutenant Frazer, as well as Captain Trent, was absent, leaving Ensign Ward in command. He heard of the approach of the French four days before their appearance. Work was pushed on completion of the structure and the last gates were hung just before the French force swept into view, coming down the river, on April 17, 1754. The fleet was an imposing one—500 canoes and 60 bateaux with four armed men in each, and bringing eighteen cannon.

Contracoeur demanded immediate surrender. Ward attempted to temporize by replying that the fort at the time had no officers of rank sufficient to treat in the matter, but the Frenchman would admit of no delay and threatened an attack on failure of immediate surrender. With the weak little building of logs and its slender garrison, this could have had but one result before the greatly superior force of the enemy and their artillery. Ward surrendered and was allowed to depart with his little company and return to Virginia.

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Things moved swiftly from that time in the contention for control of the region. The forcible taking of the fort at the junction of the rivers by the French was the first overt act in a great war, and in a few months Washington was to lead an attack in which was the first loss of life in the same. The French enlarged and greatly strengthened the defense between the rivers and called the works Fort Duquesne, for the Governor of Canada. Thus, after occupancy by the red race for a period of time uncertain in its duration, the Pittsburgh of the white men had its beginning, though that name did not attach to it until some years later.

But the British were far from allowing the rich region to go by default. A military force was organized in Virginia, with promise of aid by other colonies, and was put in the field. Major George Washington was made second in command, but an accident to Colonel Frye at Wills Creek had fatal termination, which made the young Virginian leader of the expedition. The story of that unsuccessful campaign has often been told, terminating in the repulse at Fort Necessity, in the Pennsylvania mountains. Likewise the British expedition under General Edward Braddock in the following year, most ambitious in its planning and disastrous in its outcome, needs not to be recounted here.

When Braddock's broken ranks were hurled back in rout and confusion, leaving more than half of their number on the bloody field overlooking the Monongahela, French domination of the entire basin of the Ohio became complete and for three years the tri-color of France floated unchallenged over Fort Duquesne. The theater of war shifted to the region of the lakes and the St. Lawrence, where the tide slowly turned in favor of the British. The expedition of General John Forbes in 1758 resulted in the withdrawal of the French from Fort Duquesne after they had destroyed it, and they retired from the disputed region to come no more.

Fort Pitt, larger, stronger and more complete in every way, was built by the British near the ruins of the French structure, and through the years following it was a tower of strength in defense against the foes, red and white. It

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was named for the British premier and firm friend of America, William Pitt. It was sorely tried in the uprising under Pontiac in 1763, until relieved in the nick of time by the arrival of Colonel Henry Bouquet and his force from the east.

Through the long years following, with their horrors of Indian devastation before, during and following the Revolutionary War, Fort Pitt was the rallying point in the west, first for colonists and later for American citizens, and never fell. Almost with the first work on its construction the name, Pittsburgh, attached to the settlement which began to grow up around it. This, at first, was a little cluster of log huts, and for a time its growth was slow. The testimony of various visitors to it in its early days agrees that it had all the rough elements of the extreme border settlement so often duplicated in later years, as the frontier was pushed westward.

These descriptions of the village show this character to have continued through a number of years following. When George Washington came to it in 1770 it contained only about twenty log houses, one of which was Sample's tavern where he lodged. But almost from the beginning activities were instituted along lines which grew into mighty industries, contributing in large degree to the making of the great city of later years.

Even while the French held sway boats of the primitive types then in vogue were built by them, and there was a beginning of the navigation of the local rivers which later was to achieve such vast proportions under their successors. Coal was dug by the French from the high hill across the Monogahela from the fort and used by them for fuel, as it continued to be for the fort and homes of the British adherents following them. Not much later this fuel was to be used in the making of iron products and glass, for the other materials for the making of these things were found near by in great abundance.

It is not a part of the plan of this work to trace the history of the city which grew up there, but that of a river which washes its shore. The annals of the river and city have been largely complementary in historic times, and the

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chronicles of one include those of the other in large measure. So it must be in this work, along with the contributions of other communities which came into being along the same stream.

Fire in the Hills

A peculiar reminder of Pittsburgh's earliest days continued for a period of more than sixty years, though just how much more is uncertain. Note has been made of the existence of coal of fine quality and in great abundance, in the hill directly across the Monongahela from the fort. Soon after the British re-occupancy the mining of coal was begun there in a systematic way. By some means, in connection with these operations, the coal in a section of the mine caught fire and all efforts to extinguish it were unavailing.

Through the years following various travelers who visited the place made mention of this fire in their diaries which were afterwards published. Periodical publications of the city mentioned it from time to time through the years following, and long after any outward trace of it existed the present writer remembers hearing older persons tell of it and express the belief that fire was still smouldering somewhere in the depths of the hill.

In preparation of this work the author investigated the matter of this fire of the early days somewhat. Pittsburgh City and Allegheny County engineers who were interviewed said that in connection with various improvements they had made extensive tests in the hill and later deep excavations in the construction of the roadway up the face of the hill from the mouths of the Liberty Tubes to the summit, nearly opposite the Point, and found no evidence that fire exists there today.

There are numerous other instances of smouldering fires in old mine workings and slack dumps throughout the coal regions of the Monongahela Valley and adjacent sections. In the high hill back of West Elizabeth are fires known to have been burning since long before the coal was worked out and mining operations abandoned, in the

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latter part of the last century. Ordinarily there is no surface indications of them, but at times, after a dry period, when rain or snow causes moisture to penetrate beneath the surface of the ground, jets of steam will be seen in many places. There are some other such fires burning in various parts of this coal district. In many cases vast heaps of mine waste have been slowly burning for years, and calcined slaty rock dug from these, popularly known as "red-dog", is in high favor for making hard-surfaced roads in the district.

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CHAPTER IV

Earliest Inhabitants—Prehistoric Races and Remains—Indians

The valley of the Monongahela, in common with other portions of the Ohio River Basin, was found by the first white people who penetrated the region to contain remains of structures of evident great antiquity. These were of two general classes, namely, those planned for defense and those for sepulture.

The ones in the first classification were scattered widely over the entire region. They were of various forms—square, oblong, ring-shaped or semi-circular—but apparently always having been laid out in these forms with regularity and precision. They consisted of earthen ridges, usually four to six feet high, and seldom was stone found in them. If they had been surmounted by other structures, these were of wood and had long since rotted away. Shells, beads, pottery fragments and stone implements were usually found about them, and sometimes human bones in the vicinity.

Often trees of oak, walnut, locust and other varieties were found growing in the soil of these embankments, their growth rings showing age of 400 years and more, and the loam indicating that these were not the first growths there. These works were nearly all found on the tops of high hills, frequently covering the entire summit of the hill, strongly indicating that defense was their purpose.

The other works were mounds, usually circular in form, sometimes of earth, but often with stones intermingled. Human bones found in these mounds indicate that their purpose was for the burial of the dead of the race which made them, and the bones nearly always gave evidence of having been calcined by heat. Charcoal and ashes often found in or near the mounds gave further support to this assumption. With the human remains often were found, in opening these tombs, ornaments and implements of shell,

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bone, copper and stone. Works of this character seem always to be found on an eminence, overlooking considerable streams of water, and near them are usually found large quantities of mussel shells, indicating that the people resided near to these tombs and subsisted largely on the products of the stream.

There has been much of speculation and controversy over the probable time of residence of the builders of these works in the region. The Indians found in possession of the land when white men came to it could give no information concerning these things, but said they were existent beyond any knowledge of theirs. Some antiquarians declare the Mound Builders to have been a race distinct from the American Indians, who flourished many thousands of years ago and then disappeared, leaving only these works as the evidence that they had existence. Others maintain that they were the not very remote ancestors of the Indians with whom the whites have been in contact since the discovery of the continent. Both present strong arguments to support their contentions, but it is no part of the plan of this work to engage in that controversy.

What was probably the best known and one of the most plainly marked of the first of the two classes of earthworks above referred to was that known as Redstone Old Fort, within the limits of the present Brownsville, but there were many others all over the Monongahela Country. A considerable number existed in the vicinity of Elizabeth. These were well defined in the early days of white settlement, and descriptions of their contour and appearance have come down in the household lore of the pioneer families. By cultivation of the land, road making and building operations, they have largely been effaced, though the outlines of some of them can yet be traced.

The most outstanding of the second species above referred to is the mound at the present McKees Rocks, where Chartiers Creek flows into the Ohio River, a short distance below the head of the latter stream. About thirty of them have been located along and in sight of the Monongahela, between Pittsburgh and Brownsville, and many of these have been explored, producing interesting relics of the character referred to earlier.

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The most outstanding of the second species above referred to is the mound at the present McKees Hooks, where Charlestown Creek flows into the Ohio River, a short distance below the head of the latter stream. About thirty of them have been located along and in sight of the Monongahela, between Pittsburgh and Brownsville, and many of these have been explored, producing interesting relics of the character referred to earlier.

There was one other variety of relics of people of a former age. In earlier times there were, at various places along the river, markings on rocks which were evidently the work of prehistoric inhabitants. But many of these have been obliterated or removed in the changes which the years have wrought, some by destruction, to make room for improvements of various sorts, others in being covered by the permanently higher water in the river, brought by the slackwater system. Zadok Cramer's "Navigator" of 1837 has this:

Curious carvings on rocks are to be seen on many parts of the Monongahela. At the mouth of Ten Mile Creek, above Redstone, there are many; some bearing the shape of a man's foot, a horse's foot, a hand, head, a turkey, fish, birds, beasts, etc., all apparently carved by a people having had more tools than our Indians can be supposed to have had in those early periods of time.

There are some striking specimens of picture writing a short distance back from the river, in the vicinity of Fayette City. These have been interpreted by some who are conversant with such things to represent an Indian brave, a medicine man, a trail which is indicated by human footprints and the pointing of arrows, along with some other objects or creatures. The pictured surface covers many square feet of a fixed sandstone rock. Though somewhat indistinct on a cursory view, the markings stand out with clearness when outlined with chalk. Another similar rock near it was broken up for road making, some years ago, most unfortunately, for similar markings were found on some of the broken pieces of the rock, and doubtless it was a part of the same recorded message graven there many centuries ago, to preserve some information.

While numerous reminders of the former presence of Indians in the region have been found and are still encountered occasionally, the Monongahela Valley does not seem to have been the permanent abiding place of the red race in great numbers when the whites came. There were not the villages and towns frequently to be met, with fixed cabins and the raising of maize, such as were found in the interior of the present State of Ohio, of the southern and central portions of New York, or even in the valleys of the Allegheny and Ohio Rivers in Pennsylvania.

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It is true that, as has been noted, Shannopin, the Delaware, and his town had a continuing existence through a considerable number of years, on a site within the present City of Pittsburgh, but it was on the bank of the Allegheny. There is evidence that there were some other scattered villages and clusters of lodges to be found here and there, along or near to the Monongahela, but these, apparently, were not of long continuance in that period, most of the Indians found in the region at the time being nomadic in their habits.

A possible reason for this lay in the fact that the Delawares, whose home had been near the river of the same name, and the Shawnees, theretofore settled farther to the south, were in those years engaged in a migration which settled them finally in the valley of the Ohio River and adjacent parts. Both of these peoples were in subjection to the powerful tribes of the Six Nations, but were permitted by them to take this trek. Thus most of the red men found in this hunting ground of the lordly Iroquois in that period were of the Delawares or Shawnees, though there were some mongrel Mingoes and bands of other Indian peoples, with more or less scattered habitation in the vicinity of the Monongahela.

A band of Shawnees had their village at the point where Sewickley Creek flows into the Youghiogheny River, in the first half of the eighteenth century, but no mention of it is found in any account this writer has seen of the spirited doings in the latter half of that century and later. Shingiss, Delaware chief, and his band were established at the mouth of Chartiers Creek; Logstown, founded by the Shawnees in the westward march and for years a famous place of meeting and council by the Indians and whites, was a few miles below; beyond that, at the mouth of the Beaver, was another village of the Shawnees; but these were all on the Ohio. The migrating Shawnees paused for a time to establish and dwell in a village at the site of the present Tarentum, and the Delawares had their important town of Kittanning; but these were on the Allegheny.

George Washington, on his first visit to the valley of the Monongahela, found the Seneca "Queen" Aliquippa and her people, dwelling at the mouth of the Youghiogheny, where the City of McKeesport now stands. But such

accounts of this lady as the records of the time have preserved prove indubitably that she was a confirmed wanderer. These show that she could not have been a resident there long before, and it is certain she was not there long afterwards. She and her son were with Washington the following year at Fort Necessity, and before that year had expired she died in the present Huntingdon County.

Nemacolin, the Delaware, by whose path came Christopher Gist over the mountains into Southwestern Pennsylvania, in 1751, had his home where the present Dunlap's Creek empties into the Monongahela. It was then and for some time afterwards known as Nemacolin's Creek, and the place was where Brownsville now stands. This same Nemacolin was also something of a rover and is heard of at various places. No account that has been found represents him as having had much of a following, and such settlement as he had on Dunlap's Creek must have been of a few lodges at most, and the residence probably was not of great duration.

Christopher Gist's diary gives, as told in Chapter II of the present work, a description of the country between the foot of the mountains and the Monongahela, and it tells of visiting an Indian village where a trader who was an interpreter presented an Indian whose name Gist gives as Nemacottin. The Indian made complaint that white people had taken from him land on Brandywine Creek which had been granted to his father by the Proprietor of Pennsylvania. He asked Gist to try to secure relief for him. The incident occurred in the vicinity of Nemacolin's home. Did Gist refer to him and get the name wrong? In the next sentence he tells of crossing the "Mohongaly" and proceeding on to the Kanawha. If this was not Nemacolin, it gives information of another Indian village near to the river, but no hint is given as to its size or importance. Presumably it was not great and was as transient as many others. The strong probability is it was Nemacolin's well known village.

Catfish was the English equivalent of the name borne by a Delaware chief who was wont to pitch his tent beside the little stream which flows through the present City of Washington, Pennsylvania. The name is preserved in that of the stream, still known as Catfish's Run. But such ac-

accounts of this lady as the records of the time have preserved prove indubitably that she was a confirmed wanderer. These show that she could not have been a resident there long before, and it is certain she was not there long afterwards. She and her son were with Washington the following year at Fort Necessity, and before that year had expired she died in the present Huntingdon County.

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Gatfish was the English equivalent of the name borne by a Delaware chief who was wont to pitch his tent beside the little stream which flows through the present City of Washington, Pennsylvania. The name is preserved in that of the stream still known as Gatfish's Run. But such ac-

counts as have come down indicate that this was not a permanent abode, but a seasonal lodging place for Catfish and his people when they were hunting game with which the vicinity abounded. Hence the earliest name of the place by whites—Catfish's Camp.

Careful search and wide reading have convinced the writer of this work that there were no well established and long continuing Indian towns in the valley of the Monongahela, within Pennsylvania, in historic times as these have been recorded for this region. And knowledge of none along the same stream, farther up, has come to him. But, as has been said, there are indications at various points along the stream, and all over the district in which it is central, of a considerable such population which must have been earlier. These are the finding of implements of Indian use, and especially the unearthing of human bones not buried after the manner of the Mound Builders, but giving evidence of more recent interment.

Evidences of the early residence of considerable numbers of people have been found within a few miles of Belle Vernon, on both sides of the river. One of these, at Dunlevy, would seem to have been both a camping place and burial ground. Large numbers of arrow-heads, pottery fragments, stone implements, pipes, etc. have been found and a number of skeletons exhumed, the condition of which indicated burial probably not much earlier than the beginning of the eighteenth century. Like finds have been made near Allenport and Newell and at the mouth of Dunkard Creek. At Elizabeth many skeletons have been found, with like accompaniments.

Other remains have been unearthed a short distance south of Charleroi and almost directly across the river from that location. These had the characteristic marks of the earlier Mound Builders. The relics were found in distinct mounds, on high ground, the skeletons ranged in a circle, and with them were found sheets of copper and of mica, beads and other objects. Like finds have been made at Clairton, Elrama and other locations along the river.

These early denizens have all passed from the scene long since, but the later of them have left enduring monuments in the names of the rivers of the region, with their principal affluents: Monongahela, Youghiogheny, Alle-

gheny, Kiskiminetas, Conemaugh, the waters of which, with others earlier referred to, all unite to form the Ohio, the Beautiful River of the French, but no more beautiful than the others just named.

Indian Summer

That period of soft and balmy weather often experienced in our climate, in the middle or latter part of November, usually after the first rough and stormy spell which foretells winter, is esteemed a time of delight. It was far from being that to the pioneers who settled the Monongahela Country. Indian Summer was to them a time of terror. The warlike tribes who waged their conflicts through long and weary years against the whites had their homes in the wilds of the present State of Ohio. They were wont to swoop down in hordes on the remote cabin homes, killing and pillaging. If lives of any were spared, it was that they be carried as captives to the distant homes of the red men. All property that could not be carried away or driven before them, as live stock, was destroyed.

Summer was the time the Indians waged their wars, seldom venturing away from the neighborhood of their villages after the rigors of winter came. But often, when it was thought that the winter season had set in, and there would be relief from this peril until the following spring, a balmy breeze from the south would come, bringing a week, ten days, possibly longer, of warm sunshine, only faintly obscured by the soft haze in the air. Our time of delight was often to the pioneer settlers a time of dismay. For in the midst of it might be heard the whoop of the red foe, the crack of his gun and the whirl of his death-dealing tomahawk. So the people of that day came to dread Indian Summer and to hope that it might be omitted when the winter seemed to have set in.

But there was another side to the Indian character which it is only fair to give. Persons adopted into their tribes were regarded as being of their own people and often were treated with great kindness and consideration.

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When Colonel Henry Bouquet took an army into the heart of the Indian country, in 1764, and forced the natives to give up more than three hundred white prisoners, there were many affecting scenes as some of these were surrendered. This was largely but not wholly on the part of the Indians. At least two white women ran away after the march to Fort Pitt was begun and returned to their Indian husbands.

The Whitaker family settled in the lower Monongahela Valley at an early period, and Whitaker Borough, adjacent to Homestead, preserves the name at the place of their first home. About 1781, while the Revolutionary War was in progress, and the western Indians largely were allied with the British, young James Whitaker was captured near Fort Pitt and carried off by a hostile band. About the same time Elizabeth Foulke, a girl whose home was near the Beaver River, was also captured. They were adopted into the same tribe and in later years were married on the occasion of a great powwow at Detroit. The Indians gave them a wedding present of 12,000 acres of land at Lower Sandusky, (now Fremont) Ohio. There are still many of their descendants living thereabouts.



CHAPTER V

Early Moves in Settlement by White People

When John Frazer, the Scotch trader and gunsmith, built his cabin near the mouth of Turtle Creek, it was probably the first house of a white man within sight of the waters of the Monongahela, within the province of Pennsylvania. The exact date of this building is uncertain, and what, if any, help Frazer had in its erection is unknown, for the records which tell of his making his home there are lacking in information as to his family or companions, if he had such.

But the time may be fixed within a few months, for records published by the State reveal two letters written by him while he was yet at Venango, on the Allegheny, in the spring of 1753. In the first of these he addresses "all traders" with the information that the French are descending the river in force and ordering all British subjects from it. The second letter was written late in May of the same year, and must have been followed very soon by his expulsion from the region. Washington and his party arrived at Frazer's cabin in the latter part of November of the same year and it had been built in the meantime—probably that summer.

It has been seen that Washington's party had stopped a few days before at Christopher Gist's settlement between the Youghiogheny and Monongahela, much nearer the former of the two. A number of families came out that same year and established homes near to Gist's place. So far as revealed by a careful searching of the records of the time, Gist and his neighbors were the earliest people to come, seeking homes in the part of Pennsylvania then and long thereafter known as the Monongahela Country.

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CHAPTER V

Early Moves in Settlement by White People

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Dr. Alfred P. James, painstaking investigator, could find none earlier. He says in his "First English Speaking Trans-Alleghenian Frontier," page 39: "There is no doubt that by 1754 there was a small number of settlers located

west of the mountains in what is now Fayette County, Pennsylvania." This evidently refers to the Gist settlement.

But though that were true as to Pennsylvania, it would seem that there were white people living about the headwaters of the Monongahela even a little before this time, in what is now West Virginia. In 1749, the same year the royal grant was made to The Ohio Company, nearly one million acres were granted to the Loyal Company, and two years later one to the Greenbrier Company, for land in the northwestern section of Virginia. This started homeseekers in a movement which resulted in land being taken up by a number of families about the headwaters of the Monongahela and Kanawha Rivers. Among the earliest of these were settlers on the Tygart's Valley and Cheat Rivers. Archer Butler Hulbert in his book, "The Ohio River, a Course of Empire," says of these: "On these finger-tips of the Ohio * * * were located the first homes built in the Ohio Basin by white men other than French."

It was to these settlements evidently that Washington referred in the quotation from his diary already given, when he wrote in the autumn of 1753 of the suitability of "The Point" as location for a fort, which, he said, would "have the entire command of the Monongahela which runs up to our settlements."

Just how long Frazer held his location in the valley is uncertain, but it must have become untenable soon after the occupation of that which became Fort Duquesne. During the four years that the place was held by the French their Indian allies had a free hand against any British found in the region, and such few of these as were there found safety only in fleeing to the older settlements. It is probable that not any such remained during that time, unless they were some of those in the secluded mountain sections about the headwaters. And all movement into the region for settlement ceased during that period.

The few years following the retirement of the French in 1758 did not witness any marked movement for the settlement of this region. Some thin streams of immigration trickled in, but most of the whites to arrive were traders who attempted to open again their commerce with the Indians, but this did not have much result, for these

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were in large degree among those allied with the enemy. The war between the British and French dragged on, with its chief activities in other fields, and it was five years from the time the latter evacuated Fort Duquesne until the treaty of peace was signed.

But the red allies of the French were still left in large numbers in the western country, and their attitude of antagonism did not encourage settlement of the region by those who gave allegiance to the British sovereign. The French had assiduously plied these allies with the idea that the British and their colonists were after lands of the Indians, while their French brothers desired only to trade with them and leave them in possession of their grounds for residence and hunting.

Such was the situation in 1763. The treaty of Paris was concluded and ratified in that year, ceding to the British all territory in northeastern North America. But the Indian allies of the French made no such cession. Instead the notable attempt to unite all of the tribes in one great effort to rid the land of the hated invading whites, in the rebellion organized and led by Pontiac, broke forth. Bold in conception, surprising alike in the unanimity with which it was entered into by the red men generally and the secrecy marking every step until the blow fell, it well nigh succeeded in ridding the whole territory west of the mountains of whites in a day. Nearly every trader in the region was murdered, and in the simultaneous attacks on all forts, only four—Bedford, Ligonier, Pitt and Niagara—withstood the assaults. Garrisons of the captured forts were butchered and frontier settlements far and near were overrun by war parties who left tracks of blood and fire.

It was in the Monongahela Country that Colonel Henry Bouquet and his men fought against greatly superior forces of the Indians, routed them in the decisive battle of Bushy Run and brought relief to the sorely tried Pennsylvania forts, just in time to prevent complete success in wiping out all of the whites in the region. The result of this battle was the practical collapse of Pontiac's ambitious project. Bouquet followed in the next year with his invasion of the wilderness north of the Ohio and exaction of treaties which gave the border some years of relief from the red menace.

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The settlers began to come into the region again. They came principally by two highways. When Washington brought his force over the mountains from the headwaters of the Potomac, in 1754, he opened Nemacolin's Path into a road of a sort for the passage of his artillery and pack train of supplies. A year later this was further improved for the passage of Braddock's army. Over it now began to move the vanguard of a new western expansion, and it grew with the passing months and years. At first this was headed chiefly to the vicinity of the fort at the junction of the rivers, where, by the end of 1763, there was a village with an estimated population of 300. But another road, a branch, had been opened by Colonel James Burd in 1758, leaving the main stem in the present Fayette County and proceeding to the Monongahela at Redstone Old Fort. Part of the tide was diverted thither.

But the end of French domination of the section saw the opening of another highway from the east into it. Forbes in his expedition followed another old Indian path which crossed the mountains of Pennsylvania through what is its southern tier of counties of the present, and this trail like Nemacolin's Path, was widened and in some measure smoothed into a road for the passage of the army and its equipage. Over it began soon to move another pilgrimage of home-seekers which grew with passing time.

Some of those who came stopped, attracted by fine locations found amid or adjacent to the last of the mountain ridges. Thus the Ligonier Valley, the neighborhood of the upper Youghiogheny crossings and some other parts were early peopled, but the great majority pushed on to the Monongahela Country, whose richness and charm were already becoming famous in the older settled region of the East. Diverging roads from that, made by Forbes were soon opened by more direct routes to the Youghiogheny and Monongahela Rivers in their middle stretches, and the fertile acres of their valleys were soon being taken. From the earlier settlements at the headwaters a movement proceeded down the chief river, and there were settlements in the vicinity of the present Morgantown, West Virginia, very early.

All of this movement and occupation was in territory which was claimed by the Iroquois Confederacy of Indians.

The Pennsylvania Provincial Government conceded this ownership and issued proclamations which forbade settlement thereon by its subjects. But this provincial mandate was disregarded by the many who were moving into the region. In 1768, by the treaty of Fort Stanwix, the Penns bought from the Iroquois all their interest in western Pennsylvania. The opening of the provincial land office at Philadelphia in the following year witnessed a speeding up of the movement into that territory, though many of the patents for land there were issued to those already occupying the holdings thus validated.

The tongue of land between the Monongahela and Youghiogheny Rivers for a number of miles above their junction was thus early perceived to be most desirable, and was among the tracts early occupied. It was known then and for years following as the "Forks of Yough." By 1770 it was almost wholly taken by settlers. These began pushing over the Monongahela about 1767, and the many choice locations there were soon the homes of settlers, while the movement of occupation spread up and down the valley. Thus settlement of the region continued through the years, and at the opening of the Revolutionary War the Monongahela Country constituted the most populous region of English-speaking people west of the mountains.

Fish and Fishing

The Monongahela River, as found by the early settlers of its region, teemed with fish, and this condition continued through the years. Hugh H. Brackenridge thus wrote in the "Pittsburgh Gazette" in 1786:

The fish of the Allegheny are harder and firmer than those of the Monongahela, owing, it is supposed, to the greater coldness and purity of the water. The fish in general of these rivers are good. They are the pike, weighing frequently 15 to 20 pounds; the perch, much larger than any I have seen in the Bay of Chesapeake, which is the only tide from which I have ever seen perch; there are also the sturgeon and many other kinds of fish.

Of the "many other kinds" referred to by Judge Brackenridge, fishermen of former days in the Monongahela remember catfish of two varieties, sunfish, black bass, rock

bass, salmon, suckers and some others. Mud cats sometimes attained great size. The present writer saw one which weighed 75 pounds (a true fish story) and heard of others almost as large. There was also a small species of alligator, so called, occasionally caught, but harmless as well as useless.* Before it was forbidden by law, seining and fishing by out-lines were popular and very productive of results. The latter was a long and stout line, one end attached near the shore and the other held down by a stone far out in the river, many short lines with hooks being attached to it. The fishermen would catch his out-line with a grappling hook dragged from a skiff.

The summer season used to see the upper stretches of the river lined with fishing camps. These were peopled largely by glass and iron workers from Pittsburgh, though sometimes by family and other groups. For many years discharge of sulphur from the mines and acids from the mills lining its shores has driven all life from the waters of the lower pools. Even earlier, fish were banished from the Allegheny by petroleum impregnating its waters, coming from the extensive drilling operations along the upper reaches of the stream and its tributaries.

* W. E. Fels, Inspector in charge of the government boat-yard at Charleroi, gives the information that this creature is still sometimes found in the mud at the bottom of the river in some of the upper pools. It is the American salamander and known to rivermen as the water-dog. Not infrequently, in pumping out lock chambers for repairs or alterations, these dwellers in the river come to light.

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CHAPTER VI

Roads, Ferries and Bridges

Most of the very early visitors to the Monongahela Country probably made the journey to it by water, and many among these were French. They came by the Allegheny River, both in organized expeditions down the streams, under government sanction, and in straggling parties of traders. According to records, these movements generally date from the first half of the eighteenth century. Records of a few expeditions up the Ohio exist.

But there came also English-speaking traders in the same period. Some of the earliest of these also reached their destination by the valley of the Allegheny, but they traversed it only in its lower stretches. Practically all of the roads used by the whites in reaching the Monongahela Country were first paths, long trodden by the Indians. One such, which came from the valley of the Susquehanna, followed a course approximately paralleling the Juniata its entire length, and from the mountain summits at its source proceeded to the Indian town of Kittanning on the Allegheny. Thus came some of the very earliest British subjects into the Southwestern Pennsylvania region.

From this path one branched off a little to the southward in the present Blair County and proceeded directly to the junction of the rivers at the head of the Ohio. This, with its eastern extension in the valley of the Juniata, was later improved to become a wagon road, later the Northern Pike, an important course of travel in the days of the stage coach and Conestoga wagon, and now followed largely by the William Penn Highway. Likewise the Forbes Road, first an Indian path, became the busiest roadway between the eastern and western metropolises of the state, and is now practically the Lincoln Highway, giving most direct driving connection between the two cities. So Nemacolin's Path became the Braddock Road and later the National Highway for much of its extent.

THE
HISTORY OF THE
CITY OF BOSTON

From the first settlement of the city in 1630 to the present time, the history of Boston is a story of growth and development. The city was founded by a group of Puritan settlers who sought a place where they could practice their religion freely. Over the years, Boston has become one of the most important cities in the United States, known for its rich history, culture, and education. The city has been the site of many significant events, including the Boston Tea Party and the Battle of Boston. Today, Boston is a vibrant city with a mix of old and new, offering a unique experience for visitors and residents alike.

From the Forbes Road another path branched off to the southwest a few miles west of Bedford, and early in the westward movement of the white race it was opened into one of the rough highways of the time, known as the Glade Road. This reached the Youghiogheny near the present West Newton, and proceeding on towards the Monongahela, branched, one way crossing the river at the present Monongahela, the other proceeding a little more northerly to a crossing near the present Elizabeth. This road reached the Pittsburgh site by a more direct way than by following the river. In the days of early settlement of the region this highway over the mountains from the east and to the Monongahela was called the Great Road.

The main roads from the east all brought settlers and their possessions to the new country. Soon these roads began to be connected up by others, and much of the earliest court records of the region pertain to movements for the laying out and making of roads between settlements which soon began to grow up. A little later the highways from the east were bringing many to the rivers, particularly to the Monongahela, who continued the journey by water farther to the west and southwest, as those sections began to be settled. That movement will be treated more fully in a later chapter.

It was notable in the Indian paths that they proceeded by courses surprisingly direct, laid out as they were without the aids usually employed by the white man in locating and making his roads, and nearly always following along ridges rather than the low places. Thus the red man sought to avoid being entrapped by enemies and at the same time keeping away from marshy places and those overflowed in times of freshet. In crossing considerable streams these paths invariably did so just below the discharge of tributary streams, where the formation of bars contributed to ease in fording.

Thus it was that settlements would begin to grow up at the points where the roads reached the rivers, and here the streams would be crossed by fording, if it were desired to continue the journey farther. But there were times when the stage of water in the river made fording out of the question. Then there had to be a wait until floodtide subsided to normal stage again, or provision be made for

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Thus it was that settlements would begin to grow up at the points where the roads reached the river, and here the streams would be crossed by fording, if it were desired to continue the journey farther. But there were times when the water in the river made fording out of the question. Then there had to be a wait until flood tide subsided, or a normal stage again, or provision be made for

transportation across the stream by suitable vessel. That led to the establishment of ferries at points convenient to the road terminals. The first ferries were canoes for the carrying of persons, but soon flatboats were provided on which horses, vehicles and their loads could be transferred.

The type of ferry-boat which came into very general use was a long and low open vessel with a flat bottom and gradually sloping rake at each end. It was wide enough for the width of one vehicle and passage room for the men who poled it across the stream. Two or more vehicles and their horses could be accommodated for length, and at each end of the craft was a hinged apron to facilitate driving on and off the boat. When slackwater improvement brought the water in the Monongahela to a permanent stage rendering fording impracticable, the ferry was the only means of crossing.

As the years passed, came the rope stretched across the stream, on which the ferry hands pulled. This was at the up-stream side of the craft, the line passing through pulleys on short upright posts. Still later the steam ferry-boat was employed at important crossings where bridges had not been provided. The first of these on the Monongahela above Pittsburgh was at McKeesport, started in 1846, when the craft named Yough was put in commission,* and the second was at Elizabeth, beginning in 1870, the boat being the Drover.

The earliest ferry across the Monongahela of which there is record was at Pittsburgh. It was established near the fort and dated back almost to the beginning of activities there. Ferry Street took its name from the landing. It is uncertain who was the first operator of this ferry, but the name of John Ormsby was connected with it very early. The years of his operation of it likewise are uncertain, but proceedings of the courts of Virginia, then claiming the section as part of its domain, reveal that in the early seventies Jacob Bausman was operating a ferry at the same place from his public house on the south side of the river. Possibly his activity was contemporary with that of Ormsby, for it was not uncommon to find two ferries operating at the same place by two parties, having

* Everts's "History of Allegheny County."

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The earliest ferry across the Monongahela of which there is record was at Pittsburgh. It was established near the fort and dated back almost to the beginning of settlement there. Ferry Street took its name from the landing. It is uncertain who was the first operator of this ferry, but the name of John Gurney was connected with it very early. The years of his operation of it likewise are uncertain, but proceedings of the courts of Virginia, then claiming the section as part of its domain, reveal that in the early seventies Jacob Bowman was operating a ferry at the same place from his public house on the south side of the river. Possibly his activity was contemporary with that of Gurney, or it was not uncommon to find two

their respective bases on the different sides of the river. In the early part of the following century the same ferry was long known as Jones's. Recollections of an old captain (Birmingham), recorded in Latrobe's "The First Steamboat Voyage on the Western Waters," tell that in 1811 a ferry was maintained at Wood Street by one Graham. Six Mile Ferry was another early one within the limits of the present city, named because of its distance from the river's mouth.

The two crossings of the Monongahela made by the Braddock army (at present lower McKeesport and upper Braddock) were later the locations of ferries. At the mouth of the Youghiogeny ferries were established over both rivers by the McKees when they settled there in 1768. Colonel Stephen Bayard laid out the town of Elizabeth in 1787, and a ferry was an even earlier activity there. A little more than a mile above that place was one of the two-name ferries: It was Anderson's if one approached it from the east, or Heath's if from the west. A little farther above it Perry had his grist mill and operated the ferry from the east side of the stream, while McFarlane would ferry over the passenger desiring to cross it from the west. The present Monongahela was called Parkinson's Ferry some years before the place was much more than a ferry, but even earlier Devore was the ferryman from the east side of the stream. Washington crossed there in 1784 and recorded in his diary that it was at "Devoir's Ferry". Castner's was an early ferry at the site of the present Donora, and there was one where Fayette City now stands. Speer's ferry, at the present Belle Vernon, came a little later. These were among the earliest, but in time there came to be many others, having their locations along the entire main stream of the river.

Brownsville was one of the earliest crossing points along the river. It had its ferry from about the beginning of white occupancy until it was supplanted by the first bridge built over the river above Pittsburgh, completed in 1833. Michael Cresap, a noted man on the border in his time, and owner of the Brownsville site for a while under a Virginia grant, was operating a ferry there in the early seventies, but probably was not the original ferryman at that point.

In view of the large number of highway bridges that span the Monongahela, the author was surprised to find, on investigation, the considerable number of ferries that still exist and carry on their traffic at different points along the stream. The list of these given below is thought to include all of them and the various methods of their operation are indicated. Where once there was a large number of steam ferry boats operating on the river, only three with that mode of power now remain. These all employ the flat and cable combination, so the commodious steam ferry boat, carrying vehicles on its deck, is no longer seen. Steam operated flats are at Fayette City-Allenport, Coal Center-Newell and Millsboro-East Millsboro.

At two other points gasoline motor-boats are employed in moving flats and there are nine ferries of the flat-and-cable type, operated by gasoline or electric power. Three ferries capable of transporting automobiles or teams have their flats operated by hand power. The remaining ferries, about half a dozen in number, employ only the primitive skiff and are employed chiefly in transporting men to and from their places of employment. These various ferries are scattered along the course of the river from high up in the reaches of its slackwater improvement down to the second pool, where the skiff ferry alone among them has representation.

The first bridge over the river was that at Smithfield Street, Pittsburgh, completed in the year 1818. It was locally known then and for many years after as the Monongahela Bridge. Following the very general custom of the time, its superstructure was entirely of wood; not only the supporting trusses, girders, joists and flooring planks being of that material, but it was of enclosed construction, with shingle roof and weather-boarded sides, containing windows at intervals. That made it a ready prey to the flames when fire destroyed nearly all of the business and down-town residence sections of the city April 10th. 1845, and left only the stone piers standing. Its successor was of the iron suspension type, completed in 1846. The present steel truss bridge succeeded it in 1883, but has been greatly widened and otherwise reconstructed since then.

As late as the Civil War period there were only four bridges crossing the Monongahela from Pittsburgh to Brownsville. The first in ascending the stream was the Smithfield Street structure, the other one at Pittsburgh being the one at South Tenth Street. The others were at Monongahela and Brownsville. The three last named all had covered wooden superstructures. At the same time there was a wire suspension bridge at Morgantown, West Virginia, erected in 1854 and succeeding a ferry very early established.

The original Tenth Street bridge was built and made available for use about 1840. Harris's "Directory" for 1837, referring to the project, says: "A new bridge is about being erected from Kensington to Birmingham." The entire structure was rebuilt, with fewer piers and steel upper works, in recent years. The bridge at Monongahela was completed and put in use in the late thirties. In 1883 the superstructure was destroyed by fire and it was succeeded by one of steel four years later. This one had to give way in 1909 to the present fine structure, built jointly by the counties of Allegheny and Washington. Requirements of navigation forced the latter action.

The old wooden bridge at Brownsville was the occasion of prolonged litigation, the Federal Government opposing it as an obstacle to navigation. Finally the Government prevailed in the courts and the historic old structure, which had carried the traffic of the National Road for many years, was torn down and succeeded by the present steel one.

All highway bridges over the Monongahela were originally toll structures, for the benefit of their owning companies, but nearly all are now free. Since Civil War days the demands of traffic in foot and vehicular passage, railroads, trolley lines, etc., have resulted in increasing the number of bridges in the 56 miles from the mouth of the river to Brownsville from four to twenty-nine. Ten of them are within the Pittsburgh limits.*

* The ten in Pittsburgh are: Point highway bridge, old Wabash Railroad, Smithfield Street highway and trolley, Panhandle Railroad, Liberty highway, South Tenth Street highway, South Twenty-second Street highway, Monongahela Connecting Railroad, Gleuwood highway, Baltimore and Ohio Railroad. Others in their order, pro-

A curious fact in connection with the pioneer bridge over the Monongahela, the Smithfield Street structure, was its slight elevation. This was true of the original building of wood and the wire suspension one which followed it. It was deliberately maintained as a known obstruction to continuous navigation through many years, the same actuated by community jealousy and fear. Pittsburgh and Brownsville were growing towns in the early years of the nineteenth century. The one first named was leading, it is true, but had some fear of its up-river neighbor as a rival. This was intensified by the building of the National Road to a crossing at Brownsville in 1819, and the completion of slackwater navigation between the places in the early forties, each of these developments diverting a great traffic to the river.

Until late in the last century the approach to the Smithfield Street bridge from the mouth of the street named was a down grade. The structure left such slight clearance above the water at ordinary stage that smokestacks of passing steamers had to be lowered in going under it, and in time of high water steamboat navigation was rendered impossible. That had the result of preventing the extension of runs of boats from the Ohio on up the Monongahela, to make Brownsville the head of continuous navigation.

This condition was only corrected when the National Government, in its fostering of the navigation of internal waterways and their improvement, insisted on the raising of this and other bridges over navigable streams to allow

ceeding up the river, are: Brown's Homestead highway, Pittsburgh and Lake Erie Railroad at Homestead, Union Railroad at Rankin, Munhall-Rankin highway, Union Railroad at Port Perry, Pennsylvania Railroad at Port Perry, McKeesport-Duquesne highway, Pennsylvania Railroad at McKeesport, McKeesport-Dravosburg highway, Glassport-Clairton highway, St. Clair Terminal Railroad at Clairton, Elizabeth-West Elizabeth highway, Monongahela highway, Donora-Webster highway, Monessen-Charleroi highway, Pittsburgh and West Virginia Railroad at Belle Vernon, Belle Vernon-Speers highway, Pennsylvania Railroad below Brownsville, Brownsville-West Brownsville highway. Above Brownsville, on the main stream, are: Mason-town highway, Monongahela Railroad at New Geneva, Point Marion-West Point Marion highway, Morgantown highway, Monongahela Railroad at Catawba, Baltimore and Ohio Railroad at Hoult, Marion County highway at Fairmont, City of Fairmont highway, Baltimore and Ohio Railroad at Fairmont, a total of 38 bridges in 128 miles.

(Since the foregoing paragraph was written the County of Allegheny has begun and nearly completed construction of a fine high-line bridge at Homestead, a short distance below the old Brown one, and to replace that structure.)

ample clearance for steamboats. This bridge was the worst but not the only offender in this particular, for it was a common sight in the hey day of the steamboat on the Monongahela to see, when the water was only a little more than the normal height, boats passing under the bridges with their smokestacks laid flat or nearly so. The chimneys were built hinged for this contingency and provided with appliances for their handling in the operations of lowering and raising them again. The case of the Brownsville bridge has been noted, and rebuilding of the one at Monongahela was delayed some years while the Government insisted on a greater clearance than the plans as first drawn called for. But the condition demanded was finally met.

Another case of rivalry of cities in the early days of steamboat navigation was that between Pittsburgh and Wheeling. This was occasioned by the fact of many shoals in the upper Ohio and difficulty of its navigation in times when the water was low. The fear in Pittsburgh was that Wheeling, with a fairly navigable river at all seasons below it, would attain to the prestige of being at the head of continuous navigation, and out-distance the city at the head of the river in growth and importance. But the mineral wealth all around it, superior advantages for manufacture, the building of railroads to make it a most important center in that respect, and other causes, put Pittsburgh so far in the lead as to remove all fear of any rival within hundreds of miles. A low bridge over the Ohio at Wheeling figured in this contention for years, but Pittsburgh was the complaining party in that case. The completion of the Ohio's canalization, with a continuous nine-foot stage of water its entire length, removes such handicap for Pittsburgh as existed in the natural state of the stream.

Ferry and Tavern Charges

It is interesting to compare some charges of the pioneer days with those of the present. Information along

this line is afforded in an order of the Virginia court, sitting on May 26, 1778, in the court house overlooking the lower Monongahela, when that district was claimed to be a part of Yohogania County, Virginia. It was set forth that persons operating ferries were authorized to make these charges: "Nine pence for man and horse, four pence half penny for every head of neat cattle, and the same for a foot person, furthermore to ferry over the militia on public muster days at the rate of four dollars per day."

For services rendered travelers at taverns of the day authorized charges were: "Whiskey by the half pint, two shillings; the same made in toddy, two shillings six pence; for a hot breakfast, three shillings; for a cold ditto, two shillings six pence; for a dinner, four shillings; for a supper, three shillings; for lodging with clean sheets, one shilling six pence; stablage with good hay or fodder, five shillings; corn per quart, nine pence; oats per quart, six pence."

The Bullymanown

Old Porter, the ferryman, sat on the edge of his flat, waiting for a possible passenger. It was evening. The toads were trilling and the young frogs were piping their chorus of song along the edge of the river. From time to time old bullfrogs would add their deep bass tones from their perches along the stream. We boys called them bullymanowns, the etymology of which term the linguists are left to determine. The granddaddy of them all was wont to take up his position under the apron of Old Porter's flat, and he was there this evening, perched on a cobblestone and making his contributions to the river concert of a spring night.

Old Porter had never before thought much if anything about what the old fellow might be trying to tell in his deep-throated utterances, but it suddenly dawned on him now. That last drink he had taken at the tavern on the

bank above may have had something to do with it, but, whatever it was, it became to him as plain as a pike-pole that the old frog was saying:

"Under the root! Under the root! Under the root!"

The old ferryman resented such bare-faced duplicity, and sprang up just as the old frog began again:

"Under the root! Under the—"

Old Porter made a dash, exclaiming: "You're a dommed loyer; you're under this flat!"

And he landed heavily on the apron whereupon the surprised and alarmed old bullfrog went plunk! into the river.



CHAPTER VII

Conflicting Claims for Possession

Very early in the white settlement of the southwestern Pennsylvania region control of it was in controversy, and this dispute grew in intensity and bitterness for years. The contending parties were the Crown Colony of Virginia and the Proprietary Province of Pennsylvania. This dispute was not settled until the contesting jurisdictions had been for a number of years States of the American Union. As the very heart of the territory in question was the valley of the Monongahela River, some account of the controversy has properly its place here.

Explorations by the Cabots and others soon after the discovery of the North American Continent formed the basis of claims of control by the British Crown, and it was exercised over much of the Atlantic Coast section, while claim was made for all the land extending for distances then unknown to the westward. It has been seen that the French challenged this claim, on the basis of the discoveries on the Mississippi River and navigation of that stream from source to mouth, leading to the demand for every foot of territory drained by the Father of Waters and its tributaries to their sources.

The French-British dispute had been settled and when other obstacles had been overcome in a measure, as has been seen, the pioneer settlers soon found themselves in a heated contest over the matter of local control. The causes of this controversy cannot be gone into in detail, but some of the leading ones may be pointed out.

Imperfect knowledge of the geography of the new country was one cause which, along with a careless disregard of rights previously disposed of, made some grants by British kings and princes fertile ground for the growing of disputes when it came to administration in the territory thus apportioned. Greed of grantees in the constructions they put on their charter provisions made its contribution also.

Had all claims been allowed for territory now included in Pennsylvania, Connecticut would have taken the northern one-third of its land from the eastern to the western border, and Maryland would have a liberal slice from the southern edge as far west as the source of the Potomac. Through an ambiguity in the language of the grant to Virginia, that colony put forth a demand for all the land extending northwestwardly from the western border of Maryland. This claim was pressed, even though the basis for whatever there was to it had been abrogated by the granting power, a right which it was competent to exercise in the case of a crown colony. Had Virginia's claim been granted, most of what is now the southwestern section of Pennsylvania, west of the main ridge of the mountains, would have been lost to the Keystone Commonwealth. Had all of these claims been allowed, the portion left would have been a mere strip at the middle of its present dimensions north and south, and much abbreviated at the western end.

But William Penn, his sons and their successors stoutly maintained their right to sovereignty over the land extending five degrees of longitude west of the Delaware River, within designated latitudes. All of the disputes except that with Virginia had come to practical settlement before colonization began in earnest in the Monongahela Country. There it soon developed that the dispute was not merely one by the governing powers, but a factional fight in which, in many instances, neighbor was arrayed against neighbor.

It has been seen that the first immigration of whites in the section came largely in two streams. One of these came over the Braddock Road and it brought, in the main, people from Virginia, while that which came over the Forbes Road was composed largely of former residents of Eastern Pennsylvania and New Jersey. These brought with them the prejudices of previously existing local control, and they were ready to give allegiance to the power under which they had lived and with which they were familiar. The former Virginians insisted that they were still in Virginia and the Pennsylvanians were as insistent that they had not moved into a new jurisdiction in making their change of residence. New Jerseyites for the most

part were friendly to their Pennsylvania neighbors and disposed to side with them in the dispute in which they found themselves.

This feeling grew in intensity and bitterness when it began to affect personal interests of individuals. At first it was largely a matter of pride in former local governmental control, but when conflicting grants began to be made for the same tracts of ground, the dispute rapidly took on rancor. The two contending powers set up rival agencies of control in the region. During the years just preceding the Revolutionary War the County of Westmoreland was established by the government of the Penns. It included most of the southwestern section of the territory they claimed as their province, with its seat of justice at Hannastown, a village on the old Forbes Road and within the still existing county of the same name. Its first court session began on April 6th, 1773, and this has been declared to have been the first court of justice ever held by English-speaking people west of the Allegheny Mountains.* Hannastown was nearly all destroyed by Indians in one of the last fights of the Revolution and ceased to function as a county seat soon thereafter.

The Virginians called the region the West Augusta District, part of their Augusta County, with its seat of justice at the distant Staunton. Lord Dunmore, Virginia's governor, who was most ambitious to maintain the sovereignty of his colony in the disputed district, soon saw that there must be visible evidence of control in the region itself, and three counties were established in it. These were named Monongalia, Yohogania and Ohio, the last named being adjacent to the Ohio River in the present West Virginia and Pennsylvania, while the other two were in the valley of the Monongahela—Yohogania in its lower and Monongalia in its upper reaches as the stream flows.

But previous to this division of counties there was a brief period in which local courts were held within and for the whole district. This was first at Pittsburgh, the name of which the Virginians changed to Fort Dunmore, in honor of their governor, and later, for a short time, adjoining the present Washington. An entry in the records

* Boyd Crumrine, historian.

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on the second day of the new court's sitting at "Fort Dunmore," February 22nd, 1775, tells of a use made of the apex of the present "Golden Triangle" which Pittsburghers of today will doubtless view with interest, in its contrast to the uses of the Point now. Here it is:

Ordered, that the Sheriff Imploy a Workman to build a Ducking Stool at Confluence of the Ohio with the Monongahela, and that the person Employed bring in his Charges at the Laying of the Levy.

Court houses were built for all of the three new counties, established in 1776. Justices were appointed by the Virginia authority and their courts functioned for a number of years with the usual routine of civil and criminal actions, road views etc., as revealed by some of their records yet remaining. Not a few of the cases heard grew out of encounters in connection with land boundary and tenure disputes, and some involved clashes of authority when officials of rival factions attempted to exercise the functions of their official positions.

Two of the court houses were at locations within sight of the Monongahela River, that for Yohogania County being on the west side of the stream, about a mile above the present Elizabeth, and that for Monongalia on the east side, about two miles above the present New Geneva. Prominent partisans of Virginia were commissioned justices of these courts and sat in their sessions from time to time. Existing records of the Yohogania County court preserve the specifications from which its house of justice was built, in 1777, and they are interesting in illustrating the architectural style of county buildings of the time and place. A commission was appointed by the court

To Contract with a proper person or Persons, to Build a Goal and Court House in the following manner, and at the following place, Vizt: The Goal and Court House are to be Included in one whole and Intire Building, of round Oak, to gc Twenty four feet Long and Sixteen feet wide; two Story high; The lower Story to be eight feet high, Petitioned in the Middle; with Squeared hewed Logs with Locks, and bears to the door and Windows, according to law, which shall be the Goal. The upper Story to be five feet high in the Sides, with good Cabbins roof, with Convenient Seats for the Court & Bar. and a Clerk's table, to remain in one room, with a pair of Stairs on the outside to Assend up to said Room, which shall be Place for holding Court; with two floors to be laid with strong hewed logs; the whole to be Compleat and finished in one month from the date

The first of these is the fact that the medical profession is not a homogeneous body. It is composed of many different groups, each with its own interests and its own methods of action. The second is the fact that the medical profession is not a single entity. It is composed of many different groups, each with its own interests and its own methods of action.

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hereof. The said building to be erected on the plantation of Andrew Heath at Such Convenient place as the said Isaac Cox, Oliver Miller & Benjamin Kirkendall, Gentlemen, or any two of them shall think Proper.

A few months after this court was established in its new building it was "Ordered that Isaac Cox Gentleman contract with some Proper Person or Persons to build a pair of Stocks, whipping Post and pillory, in the Court house yard, and also a compleat Bar." These orders were carried out and the whipping post was seen in the vicinity long after the log court house had passed away.

The Pennsylvania court at Hannastown functioned in a similar structure and heard the causes of those who adhered to the government of the Penns. But, as both essayed to dispense justice for the same territory, there were inevitably clashes and confusion. Officers of one would not recognize the authority or be bound by the edicts of the other. Land titles and tenure became hopelessly involved and personal encounters over disputed holdings were frequent. There were likewise clashes of officials with arrests and imprisonments on both sides.

The pacific policy of the Penn government had provided no military arm in its western realm, but Virginia organized and armed a militia at Pittsburgh, and this was finally called into action, with the result of closing the Westmoreland County court for a time and carrying three of its justices to Staunton, as prisoners.

Records of the time tell how romance had its part in these stern proceedings. The Pennsylvania justices, on their solemn promise not to attempt to escape, were given a considerable measure of freedom at Staunton. One of them, Andrew McFarlane, seems to have mingled socially with the residents. He soon capitulated to the charms of Margaret Lynn Lewis, member of a prominent family there, and when he, with the others, was released, after being detained some weeks, he bore with him to his home her promise to be his wife. A few months later he returned to the scene of his double captivity and two horses bore the couple to Pennsylvania as husband and wife.

Later the McFarlanes made their home on the Monongahela's bank, within sight of the Virginia court house, where they lived long, reared a large family, died and were

buried. Miss Lewis was a niece of General Andrew Lewis, who had distinguished himself as commander of the Virginians in their sanguinary battle with the Indians, under Cornstalk, at the mouth of the Great Kanawha, in Dunmore's War. McFarlane was long prominent in the region and will be met again in this record.

If the policy of the Penns was one of peace, their adherents in the Monongahela Country were held by no such sentiment, for on divers occasions they demonstrated themselves to be fighters. While in the situation that has been described they were in a numerical minority, they became restive under conditions which they deemed oppressive, and more serious clashes than had been witnessed seemed imminent. Just when conditions were all ripe for civil war in the region there came distractions from another quarter.

Differences which had arisen between colonists and Mother Country had sympathetic attention on the part of residents of the western border and, as will be seen, they were among the first to go on record in vigorous protest against some of the oppressions and injustices alleged. When word reached them of the engagements at Concord and Lexington the two forces in the inter-colonial dispute dropped their differences for a time and were soon valiantly enlisted in the fight against the common foe. Evidences of their smouldering resentment flamed up again occasionally during the Revolutionary struggle, as will be noted, but fratricidal strife of the colonists was averted and the matter of the disputed boundaries was settled peaceably in later years.

Teaming Over the Great Road

The Great Road passed through the farm of Matthew McKinney within a mile of reaching the Monongahela. He was engaged early in transporting commodities between the Monongahela Country and the older settlements of the East. At first pack-horses were employed, but as the roads were improved somewhat, wagons were brought into use. Some of his descendants of the second generation are living as these lines are written, and some of his interesting recollections have been preserved through them. The

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roads were very rough and difficult, especially in the mountain sections. Not much speed could be made with a team at any place, and especially was this true in going over the mountains.

Two horses sufficed to move the load at most places in the open country, but it required a doubling of the number in surmounting the steeps of the Alleghenies, and it usually required a day to get one wagon past each mountain ridge. McKinney and his help would start with two wagons, each drawn by two horses, and it was not uncommon to spend three successive nights at one place. Arriving at the foot of a ridge, a day would be spent in getting one wagon, drawn by four horses, over it. All would spend the night there and in the morning the horses would be ridden back and the second wagon taken over during that day. On the third day one wagon would be taken over the second ridge and the drivers ride back for the third night stop at the same place, with an early start to get the second wagon over the second ridge. This program would be repeated on succeeding days and nights until all the great parallel ridges of the Pennsylvania mountains were left behind.



CHAPTER VIII

Indian Wars and the Revolution

The story of Western Pennsylvania's part in the American Revolution has never been adequately told.* The histories recount in detail the movement of armies and their engagements during the long struggle, in the territory which lay largely between the mountains and the ocean, so that every boy and girl is familiar with these before entering high school. These were the operations of the contending white forces in the conflict, and their glamour has served to obscure the vision of the average reader so that deeds of equal valor at the same time on the western border lose their true perspective, if they even come to attention.

These border conflicts were largely between the white and red races, and it is true that they did not engage such great numbers as were employed in the eastern theater of conflict, but they involved war at its worst. Their records reveal valor as high as that exhibited on any of the great battlefields of the seaboard, and some of their contributions to the final outcome of the struggle were most valuable. No exhaustive history of the period in its aspect of war will be essayed here, but a passing view is timely in this work. And as the period of Indian warfare on this border was of forty years duration, and included the Revolution as but an incident, the whole period will be included in the review.

The Monongahela Country, as the most populous region on the border at the time, was the chief theater of action in the West, either in witnessing the forays of the savage foe or in furnishing man-power employed against it. And it did this while being bled white in its contribution to Washington's forces in the East. The record of the period

* Edgar W. Hassler's "Old Westmoreland," with painstaking care and in an admirable manner, assembled much material for such a work. Some time some historian, with more time than a busy journalist could devote to it, will supplement and extend that investigation in its fruitful field, and then produce a comprehensive work, devoted to operations in the west in that notable period in American history.

is one of destruction, pillage and carnage, awful to contemplate, and whose horrors were by no means confined to those inflicted by the red race. Fort Pitt was the chief citadel of the provincial and later of the patriot inhabitants of the region. During the long period from the time of its building until it passed into disuse, many warlike movements against it were planned and once it was sorely tried in a long siege, but it never fell.

Already have been noted the operations of the French occupancy, with Washington's battle at Fort Necessity and that of Braddock on the fateful field beside the Monongahela; the Forbes expedition, witnessing battles with both Indians and French, resulting in final withdrawal of the latter from the region; the campaigns of Bouquet, with the decisive defeat of the Indians at Bushy Run and their humiliating concessions on the banks of the Muskingum.

In the years just before the outbreak of the Revolution was Dunmore's War with the Indians, in which the force under General Andrew Lewis defeated the Shawnees, under their great chief, Cornstalk, at the site of the present Point Pleasant, West Virginia. This was distinctly a Virginia war, in which Pennsylvania took no part by action of its provincial government, but a large portion the "Virginians" who were engaged in it were drawn from the Monongahela Country, in the present Pennsylvania. It was a conflict practically forced on the Indians, by no means creditable to those who brought it about, and its settlement made exactions from them highly favorable to the victors.

From the earliest mutterings of that which grew into the thunderous storm of rebellion against the mother country, known as the War of the Revolution, the inhabitants of the Monongahela Country put themselves unequivocally on record in opposition to the policies which brought about this conflict, and declarations on their part to resist to the utmost the oppressions of which they complained. The State Archives preserve the record of their action, and the language of some of these pronouncements seems prophetic of the immortal Declaration at Philadelphia more than a year later.

It has been seen that the people of the region were practically in two armed camps when word of the early

skirmishes between the British and colonial troops in Massachusetts reached the western settlements. There was an instant move for meetings of support of the brave New Englanders, and, characteristically, this took form in two gatherings, though these represented the people of the same territory. The Virginia adherents held their meeting at Pittsburgh, or Fort Dunmore, as they were calling it then, while the supporters of the Pennsylvania claim met at Hannastown.

The meetings were held on the same day, May 16th, 1775. That of the Virginia partisans, it would seem, might have been attended by some who were loyal to the government of the Penns, for these were recognized in some of them being named on the general committee of safety, and they became prominent in its activities. This committee was charged with the collection of money "sufficient to purchase half a pound of lead, flints and cartridge paper for every tithable person in the county." The possible use to be made of these is indicated in the resolutions adopted, one paragraph of which reads:

That this committee have the highest sense of the spirited behavior of their brethren in New England, and do most cordially approve of their opposing the invaders of American rights and privileges to the utmost extreme, and that each member of this committee, respectively, will animate and encourage their neighbors to follow the brave example.

Supporters of the government of the Penns were even more pronounced in opposition to British oppression. Their resolutions denounced "the acts of a wicked ministry and corrupt parliament." They took steps for the forming and equipping of military organizations and declared their willingness to submit to military discipline in resistance to such acts as those complained of, and "to the utmost of our power resist and oppose them, * * * and will coincide in any plan that may be formed for the defense of America in general or Pennsylvania in particular." Furthermore it was declared that

There is no reason to doubt but that the same system of tyranny and oppression will—should it meet with success in Massachusetts Bay—be extended to other parts of America. It is, therefore, become the indispensable duty of every American, or any man who has any public virtue or love of his country, or any bowels for posterity,

by every means which God has put in his power, to resist and oppose the execution of it; that for us we will be ready to oppose it with our lives and our fortunes.

These brave words were followed by action, and as the antagonism of the colonists and the Government of Great Britain became more pronounced, military organizations were formed which later were to give fine account of themselves on the field of battle. But there were exceptions to this fervid loyalty to the cause of the colonists. Lord Dunmore, Tory extremist, soon had to flee from the exercise of his governorship of Virginia, and took refuge on a British man-of-war in Chesapeake Bay. Dr. John Connolly, his personal representative in Pittsburgh, at first sought to enlist his neighbors in support of Great Britain, but without success, and soon he fled the region and joined his chief. A little later a coterie of Pittsburgh Tories whose plottings came to light, escaped on the eve of arrest, joined the British and for years afterwards were leaders in Indian excesses on the border. Notable among these were Alexander McKee, Matthew Elliott, Simon Girty and his brothers.

The earliest military organization formed was a company of Monongahela Valley men, commanded by Captain George Gibson, commissioned by the Virginia colonial government. They were dashing and intrepid and came to be known as "Gibson's Lambs." They fought valiantly against their erstwhile chief, Lord Dunmore, in the East, and then were ordered to the border again, to aid in its defense. In the second year of the war, when gunpowder was running low in the West and none could be spared from the scene of the chief activities, a little band, made up from this command, left Fort Pitt in flatboats and floated on the long journey down the Ohio and Mississippi Rivers to New Orleans. There a goodly supply of the precious explosive was secured and the long and toilsome journey back up the rivers, amid numberless dangers, was made in safety and the highly prized cargo delivered. The round trip covered nine and one-half months and was completed when the situation had become well nigh desperate for the defenders of the border because of the lack of powder.

Another Virginia military organization was the Thirtieth Regiment, though recruited wholly within the Monongahela Country of Pennsylvania. Colonel William Crawford was its principal organizer and became its commander. He was one of the justices of the Yohogania County court, friend and land agent of Washington, and later the victim of Indian vengeance. The regiment was under fire many times in battles of the Revolution. The Monongahela Country contributed in considerable measure also to the Fifth and Twelfth Virginia Regiments.

A regiment recruited also in the same territory was the Eighth Pennsylvania, distinctively an organization of the young Keystone State, and commanded by Colonel Aencas Mackay. He was a justice of the Westmoreland County court and one of those arrested by the Virginia authorities and carried to Staunton, as noted in an earlier chapter. This regiment was formed for defense of the border, but its services in the East were soon deemed vital and it was ordered thither, over the protest of the western people. The march over the mountains in the middle of a severe winter brought experiences fairly comparable with the sufferings of Washington's soldiers at Valley Forge. More than fifty members of the command died as result of exposure on the way, within two weeks after reaching New Jersey, including the commander and second in command. The regiment had to be reorganized and newly officered. It rendered fine service in the war.

A year after Gibson's brilliant powder exploit an effort was made to duplicate it, but this resulted in disastrous failure. Captain David Rogers, whose farm was near the present Brownsville, organized the expedition, composed chiefly of young farmers of the neighborhood. Governor Patrick Henry of Virginia commissioned Captain Rogers for the undertaking and saw that the project was properly financed. The voyage down the rivers was made without untoward incident, but it was learned that the Spaniards, friendly to the American cause, had the powder ready for delivery at St. Louis, and there, in time, it was secured.

The ascent of the Ohio was begun, but in a night stop at the mouth of the Licking the party was ambushed by a greatly superior force of Indians, under the leadership of the renegades, Simon Girty and Matthew Elliott. Rogers

and all of his party except thirteen were killed and scalped, and the survivors, some of them badly wounded, only escaped by hiding in the bushes with the coming of night. These finally reached their homes after much of hardship and many adventures.

Better known is the brilliant exploit of Colonel George Rogers Clark and his little band, which brought about the fall of three British forts on the Mississippi and Wabash Rivers and the ultimate adding of a galaxy of great states to the Union. This was also a Virginia project, but it was made up largely of Monongahela Country men and its flatboats were outfitted at and started from Fort Pitt.

By reason of his small numbers Clark was forced to abandon his leading objective in the expedition, an assault on and effort to take the fort at Detroit, the chief center of British activity in the West. The following year he again essayed that project, sponsored, as before, by Virginia. He came with a nucleus of the desired force, commissioned to raise the remainder in Virginia's "western counties," by volunteers or draft. Opposition was encountered at once. Indian raids had been frequent, with death for many, destruction of homes, crops and animals. To the protests of many residents was added that of the commandant at Fort Pitt, who complained that provisions were then sorely needed at his post and the taking of sufficient to outfit an army would create a serious situation.

Clark had the support of leading Virginia adherents among the people, but was opposed by those who claimed they were residents of Pennsylvania, over whom, they maintained, Virginia had no authority. Again the old dispute flamed up. Volunteer enlistment did not produce the desired result, and when the draft was resorted to, Pennsylvania adherents protested it vigorously. But it was employed ruthlessly and with unnecessary harshness, and finally a force of about 400 men embarked on the journey down the Ohio.

The undertaking was foredoomed to failure. Enthusiasm was lacking on the part of many. It was realized that its numbers were inadequate and desertions were frequent. A belated contingent of 100, under command of Colonel Archibald Lochry, which followed the main body, was attacked by a force of Indians and Tories when the boats

were pulled to the shore for a night stop. Lochry and nearly half of his men were slain and the remainder were carried to Canada as prisoners of war. Most of the slain were wantonly butchered by the Indians after they had surrendered to a greatly superior force. Clark abandoned his project without leaving the Ohio, and his men found the way to their homes.

The period of the Revolution was seven years of devastating warfare for the western border. The marauding Indians for the most part had their homes in the interior of the present State of Ohio. From there came bands frequently against the exposed settlers, lured by their lust for blood, the loot to be secured and rewards offered by their white allies who were determined to suppress the rebellion of the colonists. Neighborhood forts and block-houses were built all over the district into which the inhabitants were gathered when warning came of impending danger. But often the blow was struck before the place of safety could be reached, and a record of horror was made through the years.

Living constantly amid scenes of bloodshed, people became hardened and a feeling of intense hatred for the red race was created, leading to some deeds scarcely less horrid than the worst of those perpetrated by the Indians. Only in the torture of prisoners of war did the red race exceed, the attitude of many whites being that an Indian rated about the same as a wolf or snake and should be treated accordingly. An example of horrid cruelty and ferocity by whites was the outcome of an expedition from the territory in Pennsylvania, west of the Monongahela, whose members butchered nearly one hundred defenseless men, women and children in the Moravian missionary villages of the Indians on the Tuscarawas River.

And a typical instance of Indian revenge was afforded a little later in the campaign led by Colonel William Crawford. This met defeat, Crawford and ten of his men being captured. These, with the exception of one who escaped, were tortured at the stake. All were made to suffer intensely, but everything that savage cunning and cruelty could suggest was employed for the torture of the commander, who lived through four hours of awful agony before death came to his relief.

In the paragraphs preceding only the highlights are touched in the picture of the Monongahela Country's part in the Revolution. A volume larger than this could be filled without exhausting features of the struggle which had in them, besides the horrors which are a part of war, all the heroism, the devotion and patriotic zeal, the tragedy and the triumphs of the more spectacular engagements in the larger and more conspicuous theater of the war.

The Indian menace continued for nearly a dozen years following the end of the Revolution. The red men signed no treaty of peace as did their white allies. They saw in the advancing wave of white settlement, pushing farther and farther westward, a threat to their habitations and hunting grounds. Their alliances, first with the French and then with the British, were made in the hope of staying this encroaching wave. They continued their forays into the white settlements.

Three major efforts were made by the government of the young republic to break their power. General Josiah Harmar, in 1790, led an expedition into the wilds north of the Ohio, only to be hurled back in defeat, with heavy loss. The following year General Arthur St. Clair commanded a larger force in a like effort, and met more crushing defeat, retreating from the battle with loss of nearly one-half of the 1400 men he led into the fray, and abandoning much in valuable supplies and equipment.

Both of these expeditions were outfitted at and took their departure from Fort Pitt. That of General Anthony Wayne began to be organized in 1792, but the doughty "Mad Anthony" took two years to build up and drill his army. Then, with a force of 4000 well trained soldiers, he invaded the Indian country, met the foe in large numbers on the Maumee River, and not only administered a crushing defeat to the warriors but pursued them to their villages. These, with the crops surrounding them, were destroyed, and the savages were completely cowed. Thus the red menace to the Monongahela Country, after forty years of many horrors, was removed and the marauding hosts came no more.

Islands and Their Lack

A local bard wrote of the Monongahela as "The Islandless River," and it is a peculiar characteristic of the stream, as long known to those most familiar with it, that it is devoid of insular features. In this it differs from the Allegheny and the Ohio, both of which have numerous islands. But the Monongahela was not entirely devoid of them when white people first saw it. One, at least, there was, which extended for a considerable distance along, about the middle of the stream, opposite that which is now sometimes referred to as the "Golden Triangle" district of down-town Pittsburgh. There is record that in ordinary stages of water in the river the surface of this island was well above its surface, and one writer of the time tells of a crop of buckwheat raised on it. If there were any others along the course of the stream, the present writer has not found any account of them, and the islandless river it now surely is. The one referred to gradually disappeared from action of the current, aided by dredging operations in the interest of navigation.

But there was an island in the Allegheny, very near to where it meets the Monongahela to form the Ohio, which was notable in its time. It was then known as Smoky Island and was near to the north shore, nearly opposite Forts Duquesne and Pitt. Among earliest mentions of it in writings of its time was that in which it was told of as being the scene of awful torture inflicted by the victorious Indians on hapless captives, following the defeat of General Braddock's army. During the Revolutionary War Chief Killbuck and his band of Delawares, who were friendly to the American cause, were quartered there. Hugh H. Brackenridge, writing in 1786 for the "Pittsburgh Gazette," thus describes the island:

At the distance of about 400 or 500 yards from the head of the Ohio is a small island, lying to the northeast side of the Allegheny river, at a distance of about 70 yards from the shore. It is covered with wood, and at the lowest point is a lofty hill, famous for the number of wild turkeys which inhabit it. The island is not more in length than one-quarter of a mile and in breadth about 100 yards. A small space on the upper end is cleared and overgrown with grass. The savages had cleared it during the late war, a party of them, attached to the United States, having placed their wigwams and raised corn there.

Because of this occupancy the island took Killbuck's name in later years. Much of it was washed away by the swirling waters in the great flood of 1832. Subsequent floods sapped part of that which remained and gradual filling between it and the main land on the north side finally eliminated the channel there. Dredging of the main stream for improvement of navigation and other changes through the years make it difficult to determine just how much, if any, part of that which was Smoky Island remains. It is certain that its unnamed sister island which existed at the same time in the Monongahela, not far away, is all gone.



CHAPTER IX

The Young Nation's First Rebellion

The Monongahela Country witnessed the first armed resistance to the authority of the young republic, founded as result of the American Revolution, and many of its important events transpired within a short distance of the stream which gave that region its popular name. The Whisky Insurrection is dismissed with a few paragraphs by many who have undertaken to write United States history, as lacking, apparently, any special significance. But Washington and his advisors evidently did not so esteem it, for after three years of patient effort to compose the differences between the Government and the distillers in the western country, and when a great body of citizenry had taken a position of defiance to the Government and its laws, the President organized and sent for suppression of the disorder an army larger than he commanded at Yorktown when Cornwallis surrendered and the Revolution was practically at an end.

No extended setting forth of the causes of this outbreak or even the details of the Insurrection itself, can be undertaken here. Another published work of this author had that for its object.* The western people had their grievances and real hardships by reason of the excise law against which they rebelled. But the government found justification for sending an army to enforce obedience to law, after continued refusal to comply on the part of the people generally, and finally by various treasonable acts on the part of many of them.

This was manifested in refusal to register stills for the manufacture of spirits; failure to pay taxes levied on manufacture; abuse of collectors commissioned by the government and destruction of their property; persecution of complying distillers; attacks on and burning of the home of the chief excise officer in the district by armed bands of

* "The Whisky Insurrection, a General View," by Richard T. Wiley.

men, with loss of life resulting; robbery of the United States mails; great convocations of armed men when secession from the Union was boldly advocated and applauded.

The region of country was well adapted to the raising of grain. The only market open to settlers for sale of the excess of it beyond their needs was the Atlantic Coast region. But grain could not be transported by the primitive means at hand and sold in competition with that of the section in which it was offered. Distilled into whisky, it could be carried to the eastern market and sold at a profit. Some of the staples, such as salt, gunpowder and other things, were not produced in this western region, but had to be transported there. There was little money on the border, and the government script was well nigh valueless.

Exchange of commodities was the common form of commerce among people of the region, and their whisky, carried over the mountains on pack-horses, bought the things they needed, not produced by them or their neighbors. A result of all this was that whisky was a product of nearly every farm. About one in every six of these had its distillery, and it usually converted the excess grain of near neighbors in addition to that of its owner. Very early the superior character of this product of the western section came to be known, and "Old Monongahela" was a favorite brand of liquor, for many years in wide demand.

The Revolution left the government under a staggering load of debt, and various expedients were suggested for the raising of money to discharge this obligation. The excise on ardent spirits was thus levied on recommendation of Washington's Secretary of the Treasury, Alexander Hamilton. This tax was resisted by distillers generally, who complained that they were discriminated against in being, only a small class, so heavily taxed. Especially was the protest vigorous in the southwestern counties of Pennsylvania, where much of the living of the farmers was dependent on their production and sale of whisky.

Also it was claimed that it was unjust discrimination against the western people, because it cost distillers west of the mountains twice as much to make and market it as it did those living near the place of greatest demand, while the tax on each was the same. And a crowning injustice, in the eyes of the western people, as the dispute progressed,

was the fact that they were without legal relief in their own region, having to go to Federal court in the far eastern end of the State when called to answer for any infraction of the excise law charged against them.

Nor were the farmers the only ones who raised their voices against the excise, for prominent men in various walks of life all over the region championed the cause which was deemed the patriotic stand for their section. Politicians were not slow to seize it as a popular theme for the exercise of their eloquence in the hustings.

Meetings of protest were the first forms of general dissent. These were participated in and usually officered by some of the principal men of the region, thus lending the weight of their names and influence to the common cause. While some of the earlier meetings adopted resolutions somewhat intemperate in their expression, the leaders, for the most part, counselled moderation. Prominent among these was Albert Gallatin, who afterwards attained high station in the counsels of the nation. Some were members of Congress, leaders at the bar and of like prominence. When the movement got out of bounds these men, with a few exceptions, sought to stem the tide of lawlessness and warfare against the government, involving much of difficulty and something of peril for them at times.

During the continuance of the troubles there were scenes of disorder all over the region, but communities on the Monongahela or points adjacent to the stream witnessed practically all of the large gatherings of men occasioned by the dissent from the requirements of the government. For the river valley was one main center of revolt, as it was the natural rallying ground of the region.

The first meeting of protest and the last stand of the insurgents in delegate gatherings were at Brownsville. Two important meetings for conference were held at Pittsburgh. Parkinson's Ferry (Monongahela) had three important delegate gatherings. The greatest concourse of the entire movement was when 7000 men under arms gathered at Braddock. All of these places are beside the river, as is Elizabeth, where General Henry Lee ("Light Horse Harry"), in command of all the troops sent to quell the disturbance, had his headquarters for a time and issued his proclamation of amnesty, with exceptions. Near the same

place also the army of occupation was encamped during the winter following the collapse of the rebellion and scattering of its leaders.

The excise law was passed by Congress in 1791, and although it was modified later, with hope of meeting some objections, the opposition became the more intensified in the western country. Early in 1794 President Washington determined on decisive action. He appointed General John Neville as Inspector of Excise for the Fourth Survey, which comprised the southwestern counties of Pennsylvania. At the same time he issued a proclamation in which it was declared that the law would be impartially enforced, and all persons were warned against interfering with its operation.

Neville was one of the prominent men of the region, had been an officer in the Revolution, and had been sympathetic with the sentiment which brought protests against the excise law when it was enacted. Up to the time of his appointment as Inspector he was in high favor with the people of the section. He was a man of courage and determination, and went about his unpopular task with a vigor which soon made him as greatly hated as he had been loved before. By his direction prosecutions were begun against a number of farmer-distillers who had refused to comply with the law. The service of writs on these, returnable in Philadelphia, greatly intensified resentment which had been rapidly growing against the Inspector.

A party of about forty armed men appeared at the country home of General Neville, overlooking the valley of Chartiers Creek, a few miles from Pittsburgh, with a demand that he surrender his commission and papers pertaining to the pending cases and give up his office. This demand was refused and a battle ensued in which one of the attacking party was killed and others were wounded. The victim of the fatality was Oliver Miller, who had been one of the justices of the Yohogania County, Virginia, court.

The country blazed with wrath and fury as the word of the attack and its results quickly spread. Men began gathering at the Mingo Presbyterian Church, the place of usual assembly for the militia of that part of Washington County, and at other places of resort in the region. The following

morning these bands began a march on the Neville mansion, which was one of the finest in the Monongahela Country. They assembled their forces a few miles from the place, and officers were chosen to direct operations. By the time the Neville place was reached the party numbered 500 or more. Neville was at Pittsburgh, but a file of soldiers had been sent from the fort there to defend against a feared attack.

Again the papers of the Inspector were demanded and were refused by those in the house. Women and children were given safe conduct through the lines, and then the battle was on, with firing brisk between the force outside and those who were defending the place. Results of the fighting included the killing of Major James McFarlane, in command of the attacking force, the serious wounding of others and the complete destruction of the Neville home by fire. The dead leader was a brother of Andrew McFarlane, some of whose exciting experiences have been related, and had his home with the latter beside the Monongahela.

The combats at Neville's were in July, 1794, and matters moved swiftly in the days and weeks following. Feeling ran high and various assemblages discussed the situation in all of its angles. There was apprehension by some that punitive action by the government would result, but others scouted the idea and declared that even if any attempt should be made by sending out a military force against them, it could easily be defeated and dispersed in the mountain fastnesses by a determined opposing army.

A foremost spokesman of this course was David Bradford, at the time Prosecuting Attorney for Washington County. His effort was to involve the whole population of the region in active opposition to the government, his position being that in the face of such opposition the government, already sorely pressed by debt, would not undertake to organize the necessary army and send it over the difficult way to the remote region of disturbance. He found many supporters and soon was the recognized leader of the forces in opposition to government control.

Bradford was ambitious and saw opportunity for personal advancement. Soon followed his bold declaration for secession from the Government of the United States and the setting up of an independent state in the region of the

upper Ohio River and the tributaries which form it. By his planning, the mail eastward from Pittsburgh was robbed, with the double purpose of preventing word of the disorder at Neville's home from reaching the seat of government, and learning who, if anybody, was sending such information.

His also was the plan which assembled more than 7000 of the men of the region, armed, equipped and victualed for four days, at the Braddock battlefield, the place of usual large militia gatherings. There he proposed a descent on Pittsburgh, overcoming the weak garrison of its Federal military post, seizing the arms and supplies stored there, and with these equip an army ample to meet any force sent against them. At the same time he would make examples of the individuals revealed by the stolen letters to have been in correspondence with the government's officers in the East, and others of its sympathizers. Concerning the state of affairs then the brochure of this author on the subject says:

The feeling against Pittsburgh was particularly bitter, because many of the leading people there had expressed themselves against the outbreak of those in opposition to the government, and the proposition to move against the little town (for its population at this time was little more than one thousand) met with great favor. The inhabitants of the place were thoroughly scared. They made a semblance of banishing from the place some who had incurred the displeasure of the insurgents, adopted resolutions of sympathy for their cause and sent a large delegation of leading citizens and militia out to the rendezvous to mingle with the throng and attempt to placate their wrath.

It was indeed a time of real peril for the little town at the junction of the rivers, for there was ugly feeling on the part of many in the encampment against many of the townspeople, and Bradford seemed able to sway them. But the thoroughly frightened leaders who wished to avoid further disturbance and bloodshed set about matching their wits against his. They had to be most circumspect in attempting this, but were aided by the fact that Bradford, bold in planning and declaration, was vacillating and weak in execution and no match mentally for the men who faced him there. In conference it was set forth that the stores

in the Pittsburgh fort were gathered for General Wayne's army, then in the field in its expedition against the Indians who for forty years had been the terror of the border.

These and other arguments prevailed in diverting the main purpose of Bradford in bringing about the great gathering, and many of the men left for their homes. Those who lived south and west of the Monongahela proceeded by way of Pittsburgh in going to their homes. The Pittsburgh contingent marched with them to the place, and it was still a formidable force in point of numbers. All were regaled by the inhabitants with food and drink as they passed through. A number remained for the night, and there was difficulty in restraining some hot-heads, further inflamed by liquor, who proposed that some of the original objectives of the invasion be carried out. But no injury to person or damage to property resulted except the destruction by fire of the barn of General Neville's brother-in-law, who had assisted in defense of the Neville home on the occasion of the attack when it was destroyed.

There were further weeks of turmoil, with anxiety for those who hoped to see a peaceful end of the troubles, as well as many who were haunted with fear as to the final outcome of their actions. Soon President Washington issued a proclamation in which he declared that formations in the western country existed whose object was to defeat the execution of the excise law and the perpetration of acts which he defined as treason, being, in the language of the proclamation, "overt acts of levying war against the United States." He commanded the insurgents to disperse and warned all persons against aiding, abetting or comforting the perpetrators of these treasonable acts. He issued a call for 12,950 troops, to be raised in Pennsylvania, Maryland, Virginia and New Jersey, to be held in readiness for immediate service.

The army marched in November of that year, its divisions proceeding by the two main highways which had been the courses of other military expeditions in the past—the Forbes and the Braddock Roads. They met in the "Forks" between the Youghiogheny and Monongahela, but they encountered no opposition, for the leaders of the insurrectionary movement, having ample warning, had fled from the region, some never to return. The main army remain-

ed only a few weeks, but a contingent of 1500 men, under command of General Daniel Morgan, remained during the winter.

The suppression of the Whisky Insurrection cost about one million dollars, a huge sum for the time and the state of the nation's finances then. But one who goes into all the facts concerning it must be convinced that the revolt constituted a serious menace to the integrity of the young nation. The determined action of the Administration did much to give prestige to the government and its authority, engendering a wholesome respect for the same.

In the midst of the stern realities of the struggle there were, here and there, elements of grim humor. It evolved a titular hero known as "Tom the Tinker", whose personality was largely unknown at the time. Tradition which seems to be well founded, assigns the first use of the term to John Hollcroft, who led the party engaged in the first attack on the Neville house. But the appellation came to be that which stood for opposers of the excise, rather than the designation of a particular individual. These took pride in being known as "Tom the Tinker's Men" and their rallying cry was "Hurrah for Tom the Tinker!"

One common form of the Tinker's activities was in sallying forth at night, usually having embodiment in a group of men, and visiting the premises of some distiller who had submitted to registering of his equipment or paying tax on the same and its product. A written notice would be posted on the premises, warning the owner that if he did not at once align himself with the opposers of the excise, Tom the Tinker would call and mend his still in such particulars as it seemed to need. If the distiller failed to respond to this notice in the manner desired, a subsequent night would find the copper containers and pipes of his still effectually "mended" by being riddled with bullets! That was the way the Tinker worked at his trade.

Hamilton's Hospitality

One of the highest points in Washington County is Ginger Hill, on the highway between Monongahela and Washington, and its name dates back to the time of the

the patient's condition is not improved by the treatment, the patient should be referred to a specialist.

The patient should be kept in bed, and the diet should be restricted to a light, easily digestible food. The patient should be kept in bed until the fever has subsided, and the diet should be restricted to a light, easily digestible food. The patient should be kept in bed until the fever has subsided, and the diet should be restricted to a light, easily digestible food. The patient should be kept in bed until the fever has subsided, and the diet should be restricted to a light, easily digestible food.

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Whisky Insurrection. Daniel Hamilton was one of the leaders in opposition to the government. Like many others of these, he disappeared on the approach of the soldiers, but early in the period of their occupancy he came out of hiding and surrendered. He was paroled and allowed to go back to his farm, which was on the hill to which reference has been made.

It is told of him that soon after this a detachment of soldiers came to his home to take a still and stock of liquor, reported to be on the premises, in satisfaction for a claim of the government for unpaid excise assessments. It was a cold, wet and altogether disagreeable evening, and with the hospitality of the time Hamilton invited his visitors to remain with him over night and transact their business in the morning. They were glad to do so, and with a further show of hospitality he plied them liberally with native whisky which had been liberally doctored with Jamaica ginger.

The result was the entire party of visitors soon were laid out in a drunken stupor on the floor, which continued until after Hamilton and his neighbors had removed the still and its product to a safe and distant place of hiding. In the morning the soldiers were not able to find either, or any proof that there had been such things on the premises, and they so reported. Some of Hamilton's descendants are still living at the same place, which from that day to this has been known as Ginger Hill.

CHAPTER X

Early Boat Building—Types of Craft and Their Evolution

The Indians were the first known navigators of the Monongahela and its related streams. Their canoes, always paddle-propelled, skimmed over the water as they went about on their various errands in connection with the chase, their tribal migrations, their council gatherings or the more serious business of war. The vessels of the red men for river navigation were of three general types: The dug out log, the bark model and that in which the skins of animals were stretched over a framework. As the last named type does not seem to have been used largely, if at all, by the Indians of the Monongahela Country, it need not be considered further here.

The dugout was made by the laborious and slow work of cutting out the interior of a log from the forest until but a shell of the tree trunk remained. This was given pointed shape at each end, and was usually capable of carrying a number of individuals, along with some portion of their belongings. It was employed in migrations by water, carrying the individuals and their portable possessions. It was also used in transporting considerable war parties, moving as compact bodies.

The bark canoe was made by using the bark stripped from a birch tree of fair size and kept in one piece by a cut along the bole and twice around it to give the desired length. The ends were then shaped, drawn together, laced with thongs and made water-tight with pitch, the whole structure being given rigidity and kept in shape by light wooden ribs bent to the required forms. The capacity of the ordinary vessel of this kind was two men. It was light in weight, could be propelled much more rapidly than the dugout kind and could be conveyed readily across portages between streams.

The Indian took great pride in his canoe and often labored long over it, to give it graceful shape, lightness and capacity for speed. He was wont to decorate it in bright

colors and in such varied designs as his savage fancy suggested. In leaving the water for continuation of a journey by land, canoes were often so hidden under bushes along the river's edge or among the undergrowth in some glen that it was most difficult to discover them unless they were stumbled upon unexpectedly.

The earliest craft of the white men in these waters conformed to the models of the aborigines, the dugout type in particular being copied. But, with better facilities for wood working, the paler race made the craft larger, sometimes joining two great logs in forming one such, and soon were producing vessels capable of carrying much more than those of the Indians. These were known as pirogues and came into large use in the early days of settlement. But they were heavy to propel and somewhat clumsy, making them difficult to paddle up-stream against any considerable current.

It was recognized that the requirements of navigation of the local streams made it necessary that vessels used, and especially those for transporting commodities of considerable weight, must be flat and expansive in form, that they might not sink very deeply in the water. The rivers abounded in shoals, or "riffles," as they were usually called, where, in times of low stage, the shallow water which connected the successive natural pools, gurgled down over these gently inclined spaces. The Monongahela was less boisterous than the other streams with which it was connected, but nevertheless had many riffles, account of which had to be taken in any plans for early navigation.

So the bateau was the next step. It was constructed of planks, had a flat bottom, rounding up in a rake at each end, the ends being square in form. The sides were somewhat curved, so that it was widest at the middle. It was propelled by both oars and poles. The skiff with sharp prow was a later development, and the flats and barges which came with the coal shipping era were only other variations of the bateau form, but were much larger and had straight sides. The bateau, like the pirogue, was clumsy and difficult to navigate up-stream, so did not often return from a considerable voyage down the rivers. In the abundance of lumber and great difficulty of a long voyage

against the current, it was deemed more economical in many cases to dispose of the carrier at the end of the voyage.

The flatboat was the next development. It was much larger than the bateau, with straight sides and square at each end. Like the other vessel, it had a sloping rake at the bow, but the stern was built vertical. The gunwales were built up somewhat higher, especially towards the stern, as a means of protection against foes. Great oars, called "sweeps," were attached on pivots at the sides for propulsion, with a like one at the stern for steering, and often this was aided by a smaller oar on the bow, called the "gouger." Sometimes a mast was set up on the flatboat and a sail aided the progress when the wind was favorable. A low cabin, with sides and roof of planks, was near the stern and housed the voyagers. Flatboats, being too heavy and cumbersome to handle against a current, never returned from a voyage down the rivers.

The keelboat was the first vessel used on the western rivers conforming to the marine type of craft building. Its name gives a key to its general form. For it a keel was laid along the middle, from stem to stern, with curved ribs proceeding outwards and upwards from it. These were planked over lengthwise and curved inward at the ends, making sharpened bow and stern. A cabin was built in the hull, called the cargo-box, extending nearly the entire length and above the sides of the hull. This cabin was enough narrower to allow the laying of a flat plank on each side, along which the boatmen walked in propelling the craft. This operation was accomplished by the men walking from prow to stern, each with an iron-shod pole against the bottom of the stream, its other end being pushed by the padded shoulder of the boatman. Like the flatboats, some keelboats were equipped with mast and sail, to aid in the moving when conditions were favorable. The general appearance of the keelboat was much similar to that of the canal-boat of a little later period.

Excepting the great coal containers before referred to, all subsequent types of river vessels in the evolution of a century and one-half followed the keel and rib form. This naturally led to the construction of ships designed for ocean voyages, for it is true that there was a period, and an early

one, in which many vessels of this type were built on the shores of the Monongahela and upper Ohio, and began their voyages to ocean ports in various parts of the world, as will be brought out later in this work.

Then followed the steamboat, and it had its place on the Monongahela but four years after Fulton's Clermont had successfully demonstrated this manner of navigation on the Hudson. The inventor himself participated in this early expansion of his idea. It is significant that even then he saw the possibilities of the great Mississippi Basin as presenting an adequate field for this development. He was prophet as well as inventor, but it may well be accepted that his wildest dreams did not measure up to realities of a few years later, when the steamboat was king on the western rivers.

Be that as it may, the steamboat New Orleans slid into the water of the Monongahela at Pittsburgh in 1811 and successfully made its way to the city for which it was named. It was crude and ungainly as compared with the palatial packets of a few years later, and pitifully weak, if compared with one of the mighty towboats which took acres of coal in a single trip down the rivers when that trade reach high tide. But these are stories to be told more in detail in their proper succession.

Boat building on the Monongahela probably had its beginning at Pittsburgh. During the French occupation there, from 1754 to 1758, they were dependent on supplies reaching them from Canada and their settlements on the Mississippi. There are accounts of expeditions arriving at Fort Duquesne by the Allegheny and Ohio Rivers during this time, and of communication by water both ways. On the approach of Forbes and his army in the autumn of 1758, the entire force of the French fort got away, proceeding, in two considerable flotillas, in boats on both the Allegheny and the Ohio. It is a fair inference that they built river craft during their occupancy there, since they were so well provided with them when they left. They not only were speeded on their way, but took with them many of their possessions in the vessels which afforded them passage on the two rivers over which they decamped.

Certain it is that there was much of boat building by the British during the years following, in their occupancy

of Fort Pitt and beginning early. This activity was continued by the adherents of the younger nation after it had thrown off the yoke of the Mother Country, and through all the years of its subsequent history Pittsburgh has been the scene of the building of many river craft of many and varied types. Diaries, the published observations of travelers and other records of the very early years there reveal this fact, and it is related in the "Pennsylvania Magazine" that such operations were under way on a rather extensive scale less than two years after the evacuation of the French fort. The British Government had sent out from Philadelphia a company of boat builders for that purpose. These to the number of sixteen arrived at Fort Pitt June 30, 1760, and the next day began their work. It is recorded that they "cut timber in the adjoining forests, hewed puncheons, built and caulked bateaux, built scows and cut logs for the storehouse."

The boat builders made important contributions all through the long period of the ward on the border, for the rivers and their boats played important parts in the moving of men and supplies in the military activities. When Fort Pitt was sorely besieged, at the time of the Pontiac Rebellion in 1763, the services of the boat builders were employed to good effect. For weary months investment of the fort was never suspended for a minute, though the Indians had a wholesome fear of its guns and kept well under cover while firing on anyone who ventured to show himself at the fort, which, it will be remembered, was on the narrow point between the converging Monongahela and Allegheny Rivers. A number of the Indians had burrowed under the bank of the Allegheny and from there kept up an annoying firing on the fort. One who was there at the time told the story of how these were circumvented, and James R. Alsbach records it in his "Annals of the West":

The following plan relieved us from our close blockade and chased the Indians from the bank of the river, the position which most annoyed us. We built upon rollers a large flatboat with high sides. The rowers were secured and portholes built all around. When finished and ready we rolled it into the Monongahela and anchored in such a position that we could fire up the Allegheny. The Indians were astonished. They were afraid to attack either the boat or the fort, which would have placed them between two fires. We raked them from the boat along the river bank. They set up the

most diabolical yells I ever heard, retired up the stream and never again ventured so close to us in daylight.

There are many references in the early records to the building of boats of various kinds at Pittsburgh in the years following. The flatboats for Governor Dunmore's expedition down the Ohio, in his campaign against the Indians in 1774, were built there and the various military expeditions of the Revolutionary period and after derived most of their floating equipment at the junction of the rivers.

References to other early activities of boat building at points farther up the Monongahela are found. As early as 1777 boat building was active near the mouth of the Youghiogheny and probably within the present City of McKeesport. George H. Thurston tells in his "Allegheny County's Hundred Years" that on February 23, 1777,

Fourteen carpenters and sawyers arrived at Fort Pitt from Philadelphia and were set at work fourteen miles above the fort, near a sawmill. They built thirty large bateaux, forty feet long, nine feet wide and thirty-two inches deep, which were intended for the transporting of troops.

At Brownsville many similar craft were built in connection with military movements of the Revolution and earlier. Soon after the coming of peace there was extensive building of flatboats and keelboats. The former were employed largely for the moving down the rivers of products of the region and the families and possessions of settlers, the latter for the local river traffic of the region. The same was true at other points along the stream, including Port Perry, Elizabeth and the present Fayette City, along with some others. There was like building of such craft in the same period at the present West Newton, Connellsville and other points on the Youghiogheny. These movements will receive more detailed mention in later chapters.

In succession came and went nearly all of the types of river craft that have been enumerated, each having its time of popularity, to be succeeded by its follower in the evolution described in earlier paragraphs of this chapter. Today's boats are of steel instead of the earlier wood, the steamer in a high state of development and improvement. The relation of the mammoth coal barge to the humble

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flatboat of the pioneer is apparent, and with these are to be seen giant freight containers for the transportation of various products of the hive of industry which is the Monongahela Valley of today. These, though vastly magnified, are not greatly unlike in form the river's primitive packet, the keelboat.

The River's Perils

Through all the long period of boating down the rivers, with products from the Monongahela Country, it was very essential that the pilot should know his river, for it was beset with perils on every hand. Especially was this true of the Ohio before it was canalized, with its rocks and bars, snags and sawyers, islands, eddies and cross currents. Many and stirring were the tales told by boatmen returning from such trips, and sometimes it may be conjectured the tales lost nothing in the telling. But the perils were real, and some poor fellows did not get back to tell the tales! For losses of valuable property and even of lives were among the contingencies that must be considered in such an adventure. Some of the memories of those old days, and incidentally one famous old coalboat pilot, were recalled by a correspondent of the Elizabeth "Herald" when he wrote for its issue of November 11, 1909:

The river men and pilots would have great times during the summer when the water was too low to run, standing around in crowds and telling of their narrow escapes, what they did and what their pilots did, and just how they had missed the pier of the Wheeling bridge by an inch etc. One time there was an election or convention or something going on in our town, and there were a good many men there from all along the river, so there was quite a crowd of river men gathered at the hotel.

There was a bar not very far off (not a sand-bar) and they got to talking about their trips down the river, their narrow escapes, how many boats such a pilot had lost, how many such a one had not lost, and so on. Some of the pilots were telling about the dangerous places, sunken logs, big rocks, sand-bars, shallow places, etc., when one of them noticed Captain Austin Lynch, standing off to one side, talking to another pilot, and he said: "Why, here is Captain Lynch now; we want to hear from you. We know you have had more experience than any of us, and we know you go down every summer to examine the channel. Come on, now; we want to hear what you have got to say." He answered: "Well, boys, when I go down the river in charge of a pair of boats, I am not hunting for bridge piers, sand-bars, sunken rocks and all that. I am looking for deep water!"

CHAPTER XI

The Flatboat, Emblem of a Mighty Movement in Expansion

The flatboat in pioneer days was the symbol and emblem of western expansion. Devised of the necessity of the time and place, as the carrier of the people and products of the then western frontier of a nation soon to be, or in the earliest years of its history, it came to stand for as well as to bear the brave spirits who in a great host were pressing still farther westward for the peopling of waste places.

As settlers pressed into the Monongahela Country and the rural life began to take on something of the form of organized community existence, it was soon realized that the farms were producing more than was needed for home consumption. The need of an outlet for this excess was perceived also. The military post and its garrison at the junction of the rivers, with the little town growing up there, made a market for part of this surplus but only a part. It has been seen that very early the excess of the staple grain yield was converted into whisky, much of which was packed over the mountains, though a little later part of it was diverted into a new outlet down the rivers.

But not all the excess grain went into spirits. Grist mills were established at various places along the river and its tributaries, being driven by the power of the running water. Flour made in these was among the early shipments. Hides of animals, both domestic and wild, swelled the cargoes. Very early in the military occupancy of Pittsburgh coal of excellent quality and in great quantity was found in the hill across the river from the fort, and soon it was being produced there in such abundance that there was a supply for others. It was found to underlie the hills all about, and before the end of the eighteenth century coal was being shipped down the river, past Pittsburgh, consigned to Ohio River points and Spanish settlements on the Mississippi. Iron and glass also were being produced in excess of the needs of the local market, providing some for shipment.

The journey down the rivers was attended by perils many, in the snags, the rocks, the bars, the rapids, and sometimes floodtide in the stream. These things in a measure could be guarded against, but there was even greater peril often from denizens of the territory passed through. For much of the time in the period under consideration the country along the Ohio swarmed with hostile Indians, eager for the loot to be obtained by capture of a flatboat and its contents. Added to this, especially during the Revolutionary period, was their lust for the scalps of the hated white foe and the prices these would bring.

And there were whites not a whit less cruel, blood-thirsty and avaricious, preying on the voyagers down the river, as renegades among Indians or bands of freebooters, organized for plunder. It was not uncommon for the foe on shore to force a miserable prisoner among them, under threat of instant death if he refused, to appear on the shore with a pitiful appeal for help from those on passing flatboats, only to lead them into a trap and the clutches of the enemy concealed near by. Some were thus enticed into capture and murder or a serious fight, and there were other cases of white persons who were alone and in actual want being passed up because of fear that they were being used as decoys of foes on the shore.

Dr. Joseph Smith, a Presbyterian pastor, lived in the Monongahela Valley, and in 1854 his book, "Old Redstone," was published. He came in contact with many who had recollection of the old flatboat period, at least in its latter days, or had information derived from their parents. His account doubtless is authentic in the main when he wrote:

The trade to New Orleans, like every enterprise of the day, was attended with great hardship and hazard. The right bank of the Ohio, for hundreds of miles, was alive with hostile Indians. The voyage was performed in flatboats, and occupied from four to six months. Several neighbors united their means in building the boat, and in getting up the voyage: some giving their labor and others furnishing materials. Each put on board his own produce at his own risk, and one of the owners always accompanied the boat, as captain or supercargo. A boat of ordinary size required about six hands, each of whom generally received about sixty dollars a trip, on his arrival at New Orleans.

They returned, either by sea to Baltimore, when they would be within 300 miles of home, or more generally through the wilderness, a distance of about 2000 miles. A large number of these boatmen

were brought together at New Orleans. Their journey home could not be made in small parties, as they carried large quantities of specie, and the road was infested by robbers. The outlaws and fugitives from justice from the states resorted to this road. Some precautionary arrangements were necessary.

The boatmen who preferred returning through the wilderness organized and selected their officers. These companies sometimes numbered several hundred, and a great portion of them were armed. They were provided with mules to carry the specie and provisions, and some spare ones for the sick. Those who were able purchased mules or Indian ponies for their use; but few could afford to ride.

As the journey was usually performed after the sickly season commenced, and the first six or seven hundred miles was through a flat, unhealthy country, with bad water, the spare mules were early loaded with the sick. There was a general anxiety to hurry through this region of malaria. Officers would give up their horses to the sick, companions would carry them forward as long as their strength enabled; but although everything was done for their relief which could be done without retarding their journey, many died on the way, or were left in the care of the Indian or hunter who had settled on the road.

Many who survived an attack of fever and reached the healthy country of Tennessee, were long recovering sufficient strength to resume their journey home. One would suppose that men would be reluctant in engaging in a service so perilous to health and life, without extraordinary compensation. But such was the love of adventure and recklessness of danger prevalent with western young men, that there was no lack of hands. The sight of 50 Spanish dollars in the hands of a returned boatman was a powerful incentive to those who, perhaps, never had a dollar of their own.

These shipments of the products of the Monongahela Country began about the end of the Revolution, when it was seen that here was a most promising market, and that was held to justify meeting all the perils involved. The Spanish who controlled the lower Mississippi were friendly to the cause of the Americans during the struggle, and some of the latter had already launched business ventures there.

The cargoes of these early carriers were not confined to the grains of the farms and the manufactured products of these, liquid and solid, along with other things yielded by the fruitful soil of the Monongahela Country. The region was early producing coal, iron, grindstones and other products of industry which found a ready market all along the rivers to the distant New Orleans. The genesis of the flatboat is shrouded in uncertainty. If it did not originate on the Monongahela, it certainly had very early and very

wide employment there. One account credits a Redstone region man with its invention while another says it was first seen on the Juniata.

But flatboat traffic down the rivers antedated commerce in the region's products by a number of years. It was first largely a movement of home seekers. The north and west shore of the Ohio was shunned because it was known to be the home of the powerful and warlike tribes of Indians who were jealous of any movement looking towards white occupancy. But the rich lands to the south of the stream proved a lure, attracting settlers. As early as 1769 Ebenezer Zane had made his clearing and erected his cabin at the mouth of Wheeling Creek, and in the early seventies there was an active movement of settlers who took up lands near the river, in the present States of West Virginia and Kentucky.

This land of promise was approached from the Monongahela, and the flatboat was the means of transportation. The emigration had interruption by the Revolution, but was resumed in greatly increased volume at the close of the struggle. Very largely it was made up of persons who came from the older settlements of the East, over the various roads which terminated in the Monongahela Country. It has been seen that this led to the establishment of yards for the production of flatboats and other craft used on the rivers, and villages grew up along these streams which owed their existence and early prosperity largely to this industry.

Brownsville became prominent almost as soon as the movement started as a point of departure by water for the migrating host, because there the flow which came over the old Braddock Road in large measure reached the Monongahela. That which came over the Forbes and Glade Roads led to the crossing of the Youghiogheny near to and at West Newton of the present, and there some tarried to secure boats for their further passage. But the more pushed on to the Monongahela, which offered better facilities than the often shallow and always swift waters of what a poet of later years called "The Dare-devil Yough."*

* Frank Cowan.

Elizabeth early took a leading place in this industry and long maintained its supremacy for the building of this and the succeeding types of river craft. As noted in the last chapter, this building was later taken up at other places along the river. Some of the more enterprising of the builders of such boats did not wait for the customer to come along, but had the boat all ready and waiting for him, advertising the fact in newspapers of the East. Thus we find Colonel Stephen Bayard, who laid out Elizabeth in 1787, advertising his town and its facilities for supplying the needs of travelers early in the following year. One of his announcements in the "Pennsylvania Journal," of Philadelphia, in 1788, read:

BOATS FOR SALE. At Elizabeth-Town, on the Monongahela, May Now be Had.—Kentucky Boats of different dimensions; where also for the future Boats of every construction and size may be had, at as low price as any on these waters. To prevent detention of travelers, so frequent on the river for want of boats, the proprietor has erected a boat-yard on the premises, where timber is plenty, and four of the best Boat Builders from Philadelphia are constantly employed. * * *

STEPHEN BAYARD, Proprietor,
On the Premises.

With a boat all ready to load up, there was also a good stock of supplies right at hand, for Colonel Bayard's general store had everything likely to be needed in the voyage down the rivers. His advertisement was kept running in the Pittsburgh "Gazette" (weekly) in which the public was informed that he carried "a fresh assortment of dry goods, hardware and groceries, which will be disposed of cheap for cash or the following products, viz., wheat, rye, oats, flour, beef, pork, tar, whisky and ginsang." If the traveler insisted on passing on without investing in either a vessel or merchandise, the thrifty colonel's ferry would convey him across the river, whence direct roads led to Pittsburgh on the Monongahela or Wheeling on the Ohio, at either of which the river journey could be taken up.

But the prospective settlers did not always depend on the boat builders of these towns by the rivers. Sometimes they brought workmen along for the building of their own boats. This was the case with the Ohio Company of Associates, an organization of New England Revolutionary officers, formed for colonization west of the mountains.

Action of Congress in 1785 made available for purchase five million acres of land between the Ohio River and Lake Erie, and advantage of this legislation was taken by the new company. It will be noted that this homesteading movement was in the "Indian Country," north of the Ohio, and marked the first authorized settlement in the territory, made available by treaty with the Indians two years before at Fort McIntosh (Beaver).

So, late in the year 1787, the advance guard of the New England colonists, forty-eight persons in the party, journeyed west over the Forbes and Glade Roads, and reached the Youghioghenny River at the present West Newton, then Simeral's Ferry. Here they tarried until the spring, building in the meantime a fleet of flatboats for the completion of their journey. As soon as the river was clear of ice they embarked, with General Rufus Putnam, who was in command, leading in his Adventure Galley, and the remainder of the little flotilla following. The journey down the Youghioghenny, Monongahela and Ohio Rivers was made in safety, to the mouth of the Muskingum, where was begun the present City of Marietta, Ohio.

Not all of those who engaged in this migration down the rivers were travelers from the older settled East. There are always restless souls who are ready to pull up stakes and move on to anything which is new and enticing. Such there were among the people already settled in the Monongahela Country, but there were two other causes which contributed in a particular way, impelling such movement on the part of some already established.

Settlement, once begun in the section, was rapid, and soon the choicest locations were all taken. Some were dissatisfied with their possessions and had hope of finding something better, so they joined the movement down the rivers. Others became discouraged and disgusted with the long existing contention and uncertainty in the Virginia-Pennsylvania boundary dispute. The land titles of some were in one and of others in the other jurisdiction, and no man could feel that he had full security in his possessions. These things led to considerable contributions from the Monongahela Country, swelling the total in the movement which extended over years and was great indeed in its proportions.

Flatboats were all of the same general type, but they were of different sizes and having varying details. Says Dr. Leland D. Baldwin in a paper, "The Rivers in the Early Development of Western Pennsylvania," read at a meeting of the Historical Society of Western Pennsylvania at its meeting November 29, 1932: "The average flatboat was about fifteen by fifty feet and carried forty or fifty tons. There were two varieties: Kentucky boats, roofed over about two-thirds of their length and built for the comparatively calm waters of the Ohio; and New Orleans boats, which were built more strongly and roofed over the entire length."

The boat had accommodations not only for the migrating group, but its household goods, implements, tools, domestic animals and stores as well. Frequently two or more families traveled on one boat, and there was work for a number of men constantly in properly handling it and often in defending it. As it was a one-way craft, it was broken up on reaching its destination, its materials usually going into construction of the first shelter there for its owners, their households and animals.

Colonel May

In the spring of 1788 Colonel John May journeyed westward over the Forbes and Glade Roads and down the rivers to Kentucky. It was on the bank of the Ohio there that he established a town which he called Limestone, which later became the city bearing his name, Maysville. As his diary throws some interesting sidelights on developments in the Monongahela Country which the preceding chapter has discussed, and his tragic end so aptly illustrates practices referred to in the same chapter, a few paragraphs concerning him and some of his movements are deemed pertinent here. His diary gives the following:

I rose early on the morning of Monday, [May] 5th; left the people and wagons behind, and advanced as fast as possible to finish my land tracks; dined at Simmerell's, on the Yohogana, and slept at Clark's on the Monongahela. While at Simmerell's, they used every stratagem to detain us all night, and perhaps as long as General Putnam, who tarried at this place two months. They said it was better boating from this river than from the Monongahela, but they

are Irish palaverers, and the truth is not in them. Clark keeps a tolerable place where it is called Elizabeths town, fourteen miles from Pittsburgh by land, and twenty-two by water. * * * This day was raised here a large shed for building boats. Almost all the Kentucky boats from the east pass this place; near two hundred have passed this spring.

"Simmerells" of this narration was the location of present West Newton. A few years after May took up his residence in Kentucky he was with a party in a flatboat, descending the Ohio. Two white men appeared on the shore and made most piteous appeals to be taken on board. They told of cruelties at the hands of Indians then declared to be on their trail. May was suspicious, but finally yielded to the pleas of the women on board whose sympathy was aroused. When the boat steered near the shore the hidden Indians sprang forth and, in a battle which ensued, killed or severely injured all occupants of the boat except two, and helped themselves to what they wanted of the cargo. Colonel May was among the slain and the decoys were renegade whites among the Indians.



CHAPTER XII

The Keelboat, Packet of Pioneer Days

The keelboat was the packet of the early days on the Monongahela and its connecting streams. It was the one vessel of that period, after the canoe of the Indian, which, in its regular operation proceeded not only down stream with the current, but up also. True it is that there were occasions when the flatboat was propelled against the current on long voyages, and the powder expeditions of the Revolutionary War period formed notable instances. But these were emergency measures in time of war, which are wont to break traditions. The successful one covered nine and one-half months in the round trip between Pittsburgh and New Orleans. And keelboats had probably not then come into being.

Some things about the keelboat gave it and its operation a glamour of romance. The trim craft and its maritime lines, as compared with the clumsy types preceding and in some measure contemporary with it, may have had their contribution to this. Then there were the incidents in the routine of its propulsion—the commands of the steersman to the brawny men with the poles, of "Set!" and "Lift!" in a sequence, failure to obey which with promptness meant danger and often disaster to boat, crew and cargo, in the swiftly flowing water of a riffle or its chute. The approach of a boat to a landing was indicated by a mellow intonation of the captain's horn, and its arrival was an event in the routine of the village.

The keelboat carried both passengers and freight, and came into use on the Monongahela and Ohio probably soon after the end of the Revolutionary War. Efforts to find mention of it in writings previous to that time have been unsuccessful, but early issues of the Pittsburgh "Gazette," the publication of which was begun in 1786, contain references to this form of craft. In an advertisement in the issue of September 2, 1786, John Blair announces weekly boat service between Pittsburgh and points on the Monongahela as far as "Gasting's Ferry, which is 35 miles by

THE HISTORY OF

THE UNITED STATES OF AMERICA

The history of the United States of America is a story of a people who have built a great nation from a small colony. The story begins in 1492 when Christopher Columbus discovered the continent. The first settlers came to the New World in 1607, and the first American-born child was born in 1609. The colonies grew and fought for independence in 1776. The new nation was born, and it has since grown into a great power. The story of the United States is a story of a people who have built a great nation from a small colony.

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water." He evidently had competition, for John McDonald, in the same issue, sets forth the fact of his rendering a like service, and names his freight rate of four pence per hundredweight. Blair does not quote prices, but promises service "at a more reasonable rate than by any other conveyance and without disappointment." Both solicited the business of carrying the weekly issues of the newspaper to its subscribers.

An advertisement in the same newspaper in its issue of October 7 in the same year sets forth that "Joseph Chester, boat builder, opposite the mouth of Little Redstone, nine miles below Big Redstone, makes all kinds of keel and other boats in the most improved manner and on short notice." The location indicated is at the present Allenport. Evidently the business of building such craft prospered, for in the paper's issue of June 15, 1789, Colonel Bayard, in referring to his Elizabeth Town, laid out two years before, has the following to say in an advertisement:

At the said town the boat building business, in all its branches, is carried on by Duncan Berryman & Company, from Philadelphia, where travelers may be supplied on short notice with keels or other boats, on reasonable terms and warranted by Stephen Bayard, proprietor, on the premises.

For the first third of the new century the keelboat was the principal carrier in the local trade of that river and connecting streams, and had a lucrative if slackening trade for years following that until slowly superseded by the steamboat on a slackwater-improved river. But its operation extended for a considerable distance beyond the Monongahela, with regularly maintained lines from Pittsburgh to various points down the Ohio and back, and on the Allegheny and Youghiogheny as well.

Note has been made of the early trade of the region in its various products and their transportation by water from producers to consumers, including divers manufactured commodities and products of the field, garden, orchard and forest. The keelboat continued this traffic. A great impetus was given to the business when the National Road from the East was completed to Brownsville. Then the stages brought passengers and the wagons brought freight, which largely were transferred to the keelboats for Pitts-

The first of these is the fact that the United States is a young nation, and that its history is a history of growth and expansion. The second is the fact that the United States is a nation of immigrants, and that its history is a history of the struggle for a better life. The third is the fact that the United States is a nation of free men, and that its history is a history of the struggle for freedom.

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burgh and points intervening or beyond. Another tide began to flow eastward over the same course.

Lines were established with boats running regularly between Pittsburgh and other places along the river. These craft maintained schedules, adhered to with a fair degree of regularity, though times of arrival were not expressed in minutes or even hours, but in days. This is illustrated in an anecdote related by A. R. Parkinson, local historian, in his address on the occasion of the centennial celebration, in 1892, of the laying out of Monongahela, giving this dialogue:

"Got any 'lasses?" asked a boy in a Williamsport (Monongahela) store one day about sixty years ago. "No," the merchant answered, "but just leave your pitcher; the Reporter will be up tomorrow."

The Reporter was the name of a local keelboat trading between Pittsburgh and Brownsville, and the assurance of the storekeeper's faith that it would "report" present on the regular day for its appearance was a testimonial to its dependability. The owners of the boats were required by law to give them names and register them at the custom house in Pittsburgh, and the records there give the names of many, indicating the conceits of their owners in bestowing these appellations. Mr. Parkinson, known familiarly as "Al" to young men of the time, told further concerning the Reporter:

A selected crew were carried, who from their long service became expert in polling. As several men on each side set their poles and ran the boat forward at the same time, it was necessary to act in concert. The unfortunate man who made a miss-set was often thrown overboard by the pole in his hands being struck by the boat. An incident indicating that such accidents sometimes happened, also showing an unforeseen danger in shallow water, is related by one who remembers it. A young man on this boat was thrown overboard, and instead of wading ashore, as he could have done, he attempted to cling to the bow of the boat. In this he failed and was ground to death beneath the boat, against the bottom of the river.

The exact proceeding is not made quite clear in the foregoing interesting description of the propulsion of the keelboat. When running with the current, or even in ascending the stream through one of the comparatively still natural pools, the alternate "set" and "lift" of the whole polling crew simultaneously, at the command of the man at the helm, would keep the craft moving as desired. But when it

1. The first thing I noticed when I stepped
out of the plane was a warm, humid
smell. It was like a giant hand
reaching out to greet me. The air was
thick and sticky, and I could feel it
on my skin. I had heard that the
weather in the South was terrible, but
this was something I had never
experienced before. The humidity was
like a blanket, and I was used to the
cold, dry air of the North. I was
in for a shock.

2. The second thing I noticed was the
heat. It was a constant, oppressive
weight on my shoulders. I had heard
that the South was hot, but this was
something I had never experienced
before. The heat was like a giant hand
reaching out to greet me. I was
in for a shock.

3. The third thing I noticed was the
humidity. It was a constant, oppressive
weight on my shoulders. I had heard
that the South was humid, but this was
something I had never experienced
before. The humidity was like a giant
hand reaching out to greet me. I was
in for a shock.

4. The fourth thing I noticed was the
smell. It was a warm, humid smell. It
was like a giant hand reaching out to
greet me. I had heard that the South
was smelly, but this was something I
had never experienced before. The
smell was like a giant hand reaching
out to greet me. I was in for a
shock.

was against a stiff current that the boat was being propelled, such a proceeding would have spelt defeat and probable disaster.

Under such circumstances the men with the poles were designated for relief one at a time, and ran swiftly from stern to bow when so directed. The importance of caution in their action under such circumstances was doubled. Old boatmen interviewed by the author had memories of many accidents to boats being propelled against strong and swift currents, sometimes attended by damage or destruction of the craft and sometimes by loss of life.

Even in those early days of navigation on the Monongahela, long before the time of a system of slackwater improvement, something had to be done by those most interested to make the passage of their boats less difficult. These works usually took the form of wingwalls of large stones set in the bed of the stream at the locations of the shallow rapids between the successive pools. They began near the shores and converged toward mid-stream, in diagonal lines downwards, after the manner of the letter V. But at the apex an opening was left wide enough for the passage of the widest boat and a little more. By this means the chief volume of water was diverted to the mid-channel, and the effect was this washed out the channel and deepened it, for the freer passage of the boats.

But at the same time the water was made even more swift through this channel, increasing the difficulty of upstream passage in that particular. When the present writer was a boy he remembers on one occasion in mid-summer when a portion of the old Dam No. 2 was washed out and the pool was drained to nearly its primitive stage. "In swimming" with other boys, the river could readily be waded across at Bridendall Shoal, a short distance below Elizabeth, and the passage clearly revealed the wingwalls there of the old keelboat days.

The memory of that experience lingered and formed the basis of an episode in a work of fiction many years later. The same writer in a newspaper series more than a quarter of a century ago, had this to say, from information coming down from the time of the keelboat, and revealing another way to handle a difficult situation:

It was a slow and laborious process, especially when against the current. At the shoals, or riffles as they were commonly called, it

was often necessary to resort to the cordelle. This consisted of a doubled rope, attached to the bow of the boat at one end and the other end tied to some object on the shore of the river at a point above. It was drawn tight, a stout stick was inserted between the lines, and with its aid these were twisted together, the boat being slowly drawn up by the shortening due to this process, which was also called warping. When no more could be accomplished by this means, (and it was only a few feet, at the best) another line was put out and drawn taut, to hold what had been gained, the cordelle again being placed and twisted as before. This was "making the rifle," a phrase which survives long after the disappearance of the last keelboat, to describe a success achieved over great difficulty.*

The keelboats varied greatly in size and capacity, for the most part ranging from six to twenty tons burden. In length they were from forty to eighty feet, and in width from ten to fifteen feet, though some were even smaller when designed for penetrating the small tributary streams. Some on the lower rivers, in the latter years of the period, exceeded the greatest dimensions above given. Draft when laden was usually two to three feet. The cabin-like structure, extending nearly the entire length of the boat, was called the cargo-box, and afforded shelter for passengers and freight, but sometimes the latter was piled on the roof also. Steering was done with an oar, the captain usually taking a turn at this task.

The range of the keelboat's operations extended from small affluents of the Monongahela to the extent of the Ohio, and some even into the Mississippi. There came to be regular runs all along the Ohio, trips between Pittsburgh and St. Louis being not uncommon, and voyages to New Orleans and back were occasionally made from the Monongahela. Three or four round trips in a year between Pittsburgh and Ohio River ports were considered normal for a boat, with the longer or shorter voyages in proportion as to time. These trips were not continuous, for account had to be taken of scarcity of water in summer and ice in winter. The totals of passengers and freight carried by the keelboats through the years of their activity ran into large figures for that early time. Mr. Parkinson, already quoted, says concerning this in its latter years:

The National Road was completed to Brownsville in 1819 and to Wheeling later. * * * Over this limestone ribbon the travel of the

* Richard T. Wiley, "Waterways and Their Navigation," in the "Pittsburgh Gazette," November 19, 1905.

divided continent surged for thirty years. The stages carried annually more than 20,000 people, while 4000 freight wagons a year hauled enough to load a modern train each day, the greater portion of which passed up and down the river, and, until the dams were completed, keelboats had the most of this trade to themselves.

It is surprising to find that the period of the keelboat ran as far into that of the steamboat as it did. Locks and Dams Nos. 1 and 2 were completed and put in use in the year 1841 and Nos. 3 and 4 three years later, giving continuous slackwater navigation from Pittsburgh to Brownsville, 55 miles. It was only then that the steamboat came into its own on the Monongahela, though boats of this type had been running there to a growing extent for a score of years before. But even after the building of the dams, records of the Monongahela Navigation Company show many keelboats to have passed through the locks.

A Bad Spell

Jimmie Rose and his keelboat, Swallow, attained the age calling for superannuation about the same time. In the erection of the little building on the corner just above the boat landing, thenceforth used by him as a grocery store, lumber from the old craft entered largely. One side of the cargo-box was used entire, and supplied a good part of the street side of the building. It may have been because it fitted in better thus, or there may have been some other good reason, but the section went in reversed as to its position on the boat. The name of the old craft was there, in bold letters, but it was upside-down, presenting an appearance somewhat like this:

MOTTOMS

One day a stranger came along and first took up his quarters in the neighboring bar-room. Having well fortified himself there, he came forth and was about to proceed on his way when Jimmie's building, with its emblazonment, met his view. He drew near and regarded it attentively. He finally started towards the door of the place, but turned back and again studied the supposed sign. Then he strode to the open door, assumed a commanding position and thus addressed the proprietor:

"You may know how to keep store, but you don't know how to spell molasses!"

CHAPTER XIII

When Ocean-Going Ships Sailed from the Monongahela

It seems like a wild flight of the imagination to picture towns on the Monongahela River as seaports, yet that is what, in effect, some of them were at the beginning of the nineteenth century. At least they were ports of departure for sea-going vessels, for many of this type of craft were built at yards on this river, loaded with the products of the region and sent forth to careers in which they plowed the high seas during following years. Many of them were even supplied with masts, yards, sails, cordage, anchors and other necessary equipment to enable them thus to navigate the ocean, though it was not the common practice to set these up for actual use until the vessel in its course was near to salt water.

The story which tells of these activities in those early days is a most interesting one. They extended over a number of years in which various settlements, not only on the Monongahela, but the Allegheny and upper Ohio as well, while these were yet hardly more than frontier outposts, produced and sent forth a considerable number of these sea-going vessels of large tonnage for their time. They followed the rivers to the Gulf of Mexico and proceeded thence to ports in various parts of the world, in both hemispheres.

As has been seen, the keelboat was the immediate predecessor of the ship as a product of the yards along the Monongahela and the rivers connected with it. It introduced on these waters the keel and rib form of construction. Was that suggested to primitive man by the spine and rib structure in the bony framework of his own anatomy? Be that as it may, the evolution from keelboat to ship was a natural and easy one, for the keelboat had the marine form of structure and sometimes used a mast and sail. But it seems a strange development for this far inland section, more than two thousand miles from salt water over the only course by which vessels could reach it.

THE UNIVERSITY

The University of the State of New York is a public institution of higher learning, established in 1784, and is the largest and most comprehensive system of higher education in the United States. It is composed of the State University of the City of New York, the State University of the City of Albany, the State University of the City of Binghamton, the State University of the City of Buffalo, the State University of the City of Cortland, the State University of the City of Oswego, the State University of the City of Plattsburgh, the State University of the City of Potsdam, the State University of the City of Saratoga Springs, the State University of the City of Schenectady, the State University of the City of Stony Brook, the State University of the City of Syracuse, the State University of the City of Utica, the State University of the City of West State, the State University of the City of Yonkers, and the State University of the City of Zephyrus. The University is a public institution of higher learning, established in 1784, and is the largest and most comprehensive system of higher education in the United States. It is composed of the State University of the City of New York, the State University of the City of Albany, the State University of the City of Binghamton, the State University of the City of Buffalo, the State University of the City of Cortland, the State University of the City of Oswego, the State University of the City of Plattsburgh, the State University of the City of Potsdam, the State University of the City of Saratoga Springs, the State University of the City of Schenectady, the State University of the City of Stony Brook, the State University of the City of Syracuse, the State University of the City of Utica, the State University of the City of West State, the State University of the City of Yonkers, and the State University of the City of Zephyrus.

There has been much controversy over the question, which was the earliest sea-going vessel built and sailed west of the Allegheny Mountains? From early days the town of Elizabeth, on the Monongahela, claimed the distinction and long the claim was not contested. The present writer admits having done much to perpetuate this claim, in a career of many years in newspaper work there and in a romance which made the sailing of the alleged first ship an important episode. But he did this in the full belief in its correctness at the time and had the authority of various historians who wrote long before.

George H. Thurston, in his "Allegheny County's Hundred Years," published in 1888, basing his statements on assertions of earlier writers, says: "Elizabeth is the point where was built, at the close of the eighteenth century, the first sea-going vessel to navigate the western waters." Warner's and other histories of Allegheny County make like claims, based on earlier publications. This then supposed first vessel was the Monongahela Farmer, completed in the spring of 1801. Its voyage started in May of that year, making a stop at Pittsburgh on the 13th. After a long delay at the Falls of Ohio (Louisville, Kentucky), New Orleans was finally reached in the spring of 1802. There the vessel and her cargo were sold. The ship was rigged out, sailed to New York and later ran between that port and the West Indies. Further reference will be made to this vessel a little later.

After the claim for the Monongahela Farmer had gone unchallenged for many years, it was asserted that the ship, St. Clair, built at Marietta, Ohio, antedated her, and was the first ship built in the Ohio Basin.* Allusions to this ship were found in various writings of authors then deceased, but no two of them agreed on dates, the years 1798, 1799 and 1800 being assigned, but details were lacking in each case. The matter was further clouded by a statement in Harris's "Directory" for 1832 that ship building was begun at Pittsburgh in 1792, the names of the constructing company and five ships built by it being given. But the present writer, in a paper read at Pittsburgh in 1911, on the occasion of the centennial celebration signaling build-

* By Archer Butler Hulbert, then Professor of American History in Marietta College and author of various historical works.

ing of the first steamboat there, demonstrated this to have been an error, in placing these occurrences ten years before their proper dates in each case.*

This was done with the aid of nearly complete files of the "Gazette" and the "Tree of Liberty," two Pittsburgh newspapers, covering the last few years of the eighteenth and the first few years of the nineteenth centuries, preserved in the Carnegie Library at Pittsburgh. It was the custom of these papers to make note of the launching and the departure of all such vessels as those being considered, and that was done in all of these cases. Instead of this activity having been begun in 1792, it was shown to have had its start in 1802. This not only cleared up the matter of priority of the two vessels about which there was dispute, (good natured throughout by Doctor Hulbert and the writer) but revealed that neither of these vessels was the first ship built in the region.

Dates in connection with the movements of the Elizabeth vessel had been preserved and well established by documents of the time, and these were reaffirmed by the contemporary newspaper files. These also established that the Marietta ship did have priority, though it was a matter of only a few days in the original sailing. The "Tree of Liberty" in its issue of June 6, 1801, contained an article, dated at Louisville, May 9, which read as follows:

On Sunday last, May 3d, arrived off this town the brig St. Clair, commanded by Captain Whipple, and passed the Falls the same day without the least accident. She was built at Marietta, in the Northwest Territory, and completely fitted out and rigged for sea. She carried upwards of one hundred tons burden, and is laden principally with flour, of which she had six hundred barrels on board. A small schooner, built at Brownsville, on the Monongahela, passed some days ago; she had neither sails, rigging nor masts, but was to be fitted out at New Orleans.

Here are three interesting facts revealed: The St. Clair preceded the Monongahela Farmer by a few days; she was fully rigged for sailing; another ship's hull passed down the Ohio about the same time, "built at Brownsville", as stated. The complete rigging of the Marietta ship at

* Richard T. Wiley, "Ship and Brig Building on the Ohio and Its Tributaries," in "Ohio Archaeological and Historical Quarterly," of January, 1913.

the point of building was an exception to the rule which prevailed generally with these river-built vessels, though most of them carried all the parts necessary for sailing, ready to be assembled and set up.

The newspapers of the time make it quite evident that neither of the ships whose names have been given was the first built in and sailed from the region. The paper from which quotation has been made had the following in its issue of March 28, 1801: "Now riding in the Monongahela, opposite this place, the schooner Redstone, 45 feet in keel, built at Chester's ship yard, near Redstone, by Samuel Jackson & Co., with masts, spars, rigging, etc., of the growth and manufacture of this western country." This may have been the Brownsville-built vessel referred to by the paper's Louisville correspondent as passing there a few weeks later. If it passed without stopping, as the account indicates, it may have been provided with the sailing equipment, but this not visible as was that of the St. Clair. In any event it must have started its voyage before either of the others, claimed as the first. There is, however, good reason to believe that this was not the first such vessel built in the region, by some years, as will appear later.

But first something more as to the Monongahela Farmer. More is known concerning it than any other like vessel of the period, because of documents long preserved pertaining to its initial voyage. It was a schooner of 92 tons burden and was built at Elizabeth (then Elizabeth Town) for the Monongahela Company, composed of farmers of the vicinity, organized for the purpose. The stock was in twenty shares of one hundred dollars each. It has been seen that Colonel Stephen Bayard brought from Philadelphia a company of expert ship carpenters to this place when he gave it its start, about a dozen years before. Harris's "Pittsburgh Directory" for 1836 is authority for the statement that another such party was brought out in 1800.

It was in that year that work on the project was begun. The plan of the vessel was drawn by John Scott, a draftsman of considerable ability. Such was its excellence that it is recorded the vessel in after years broke all records for speed in a run from New York to Balize, and when it was worn out another vessel was built on the

same model. The launch was on April 23, 1801, and its owners proceeded to load it with products of the region. The cargo included, among other things, 721 barrels of flour, 500 barrels of whisky, large quantities of hemp and flax, 4000 bear skins and 2000 deer skins, though "Cist's Cincinnati Advertiser" of an early date says the skins were taken on at Fort Massac (Metropolis, Illinois.)

The vessel moved off on a May freshet and, as has been seen, was at Pittsburgh on the 13th of that month—about six weeks after the Redstone. John Walker was in command, as master and supercargo, and his commission was long retained in the Walker family. It was published from the original by the Elizabeth "Herald" in 1876, but has since been lost. It was signed by a committee of the owners and gave explicit directions as to the handling and disposition of the vessel and cargo. These, in brief, were to proceed to New Orleans, sell the ship and its cargo, or, if that could not be done to advantage, to fit the vessel out, employ a competent crew and sail it to such island as should seem most promising; paying all expenses and making return of the balance derived.

The vessel, after being detained many months by insufficient water to carry it over the Falls at Louisville, reached New Orleans safely. There Captain Walker disposed of the schooner and its cargo, though much of the flour was damaged in becoming mouldy during the long wait at Louisville. In New Orleans Captain Walker was stricken with yellow fever and narrowly escaped death, but finally reached his home again.

The next vessel constructed at Elizabeth, according to all the records, was the Ann Jane, completed in 1804. This was a ship of 450 tons, the largest built in the whole region in all the period being considered. The owners, McFarland Brothers, Elizabeth merchants, loaded it with flour and whisky and it sailed with New York as its destination, under command of Captain John Walker. The voyage was made successfully.

There are some things which indicate that the Monongahela Farmer was not the first ship built at Elizabeth. Among papers of the original John Walker which came to light more than a century after his taking the two vessels above referred to down the rivers, there was found a pass-

port, showing him to have been in New Orleans in July, 1795, on his way to New York. The document was written in Spanish, signed by the Baron of Carondelet, and as translated was as follows: "I grant sure and free passport to John Walker in order that on the schooner Polly, her captain, Mr. John Bain, he may go to New York, showing his baggage at the office of royal duty."

This document was among effects left by John Walker Junior, son of the original John, who lived to be 94 years of age. John Junior's son, John Brisben Walker, who lived until 1932, told this writer that while he had never gone into the historical aspects of the matter, the Monongahela Farmer, Ann Jane and Polly were all long familiar names in their family traditions, and he always supposed them to have been ships sailed by his grandfather. The latter was plainly not in command of the Polly on its sea voyage.

But here was Captain John Walker on a sailing vessel at New Orleans in 1795, on his way to New York. A passport would be necessary, because Louisiana was then a Spanish possession. He was not in command, but could not be expected then to have the knowledge of seamanship to make him competent to take command as master at sea. And now this testimony: Thaddeus Mason Harris, traveler, is shown by his writings to have "arrived at Elizabethtown April 14, 1803," where he made this note:

At this place much business is done in boat and ship building. The Monongahela Farmer and other vessels of considerable burden were built here, and, laden with the produce of the adjacent country, were sent to the West India Islands.

It is established by indisputable records that the Monongahela Farmer in May, 1801, and the Ann Jane in May, 1804, sailed from this place, but there is no record of any between them. The Pittsburgh newspapers of the period were very careful to note the sailing of all ships from the home ports. They recorded the two above named from the place of their building and their touching at Pittsburgh, but only these two in those years. Harris was there a year before the launching of the Ann Jane, but speaks of "other vessels of considerable burden," sent "laden with the produce of the adjacent country." This is strong evidence that there were other sea-going vessels built there before the Monongahela Farmer, which he mentions apparently as

the most recent. There is the possibility that, as a transient visitor, he may have been in error as to the other vessels mentioned, but the probabilities are that his information, derived on the spot, of matters in the then comparatively recent past, dealt with facts. All efforts to trace the history of the Polly, before or after her presence at New Orleans in 1795 have been unavailing.

But other references have been found to ships said to have been sailed from these waters earlier than the beginning of the new century, and some earlier than the time of the Polly's appearance at New Orleans. One is in the "Journal of a Tour in the Unsettled Parts of America in 1796 and 1797," by Francis Baily, published in London in 1856. He described a journey down the Mississippi, and in New Orleans, under date of June 1, 1797, wrote:

Before I leave the subject of the Mississippi, which I have now brought to a close, I must not forget to mention that Dr. Waters, who resides at New Madrid, some few years ago built a schooner at the head of the Ohio and actually navigated it down that stream and the Mississippi, and sent it round by sea to Philadelphia, where it is now employed in the commerce of the United States. This shows the practicability of building vessels on this river where everything fit for such work is in such abundance.

Baily adds in a footnote: "I find that this has been repeatedly done since my return." That, it will be remembered, was in 1797 and the voyage referred to was "some years since." Another reference to an early unnamed ship, this one built on the Monongahela, between Brownsville and Pittsburgh, was contained in a "Report on Roads and Canals," communicated to the Senate of the United States April 6, 1808, by Albert Gallatin. This report, published in "American State Papers, Miscellaneous," I, 732, reads as follows:

As early as the year 1793, a schooner built on the Monongahela, between Brownsville and Pittsburgh, reached New Orleans by that extraordinary inland navigation, and arrived safely at Philadelphia. This first essay stimulated the spirit of enterprise so conspicuous in American character, and numerous vessels from 100 to 300 tons are now annually built at several shipyards of the Ohio and Pittsburgh.

Gallatin was long a resident of the Monongahela Valley, well posted concerning the region, and should have known what he was talking about on this occasion. But now comes account, apparently well attested, of a vessel

still earlier than any yet referred to, with her name and those of her captain and crew. Dr. Leland D. Baldwin, librarian of the Historical Society of Western Pennsylvania, Pittsburgh, brought to the attention of this author the two references last above given, which seem to carry sailing of ocean-going vessels from the Monongahela back to 1793. Now, as this chapter is being written, he comes with another, a quotation from the "Kentucky Gazette," published at Lexington, May 5, 1792, in these words:

The sloop *Western Experiment*, Captain Charles Nicholson, built on the Monongahela and bound for Philadelphia, passed Limestone, on Saturday, the 23rd April, navigated by Isaac Brown, Samuel Moor, Walter Morris, Joseph Woods and Andrew Mitchel.

So it would seem well established that sea-going vessels were being built along the Monongahela a number of years earlier than the dates which have been generally accepted as the beginning of this activity. But it has not been definitely established which was the very first such enterprise. The name of the vessel last referred to, *Western Experiment*, carries the hint that it may have been the earliest such ship. Perhaps it was, but who knows or can find out? And just where was it built, "on the Monongahela"? Perhaps these queries will yet be answered. The search is commended to students interested in this history. To the present writer the investigation, so far as it has been pushed, has been found a most fascinating one, with rewards by the way of facts discovered here and there, and the incentive always of hinted facts just beyond.

The establishing by John A. Tarascon, James Berthoud and Company of their works, extensive for the time, at the beginning of the century, did much to stimulate local ship-building at Pittsburgh and its region. Not only did these people have well equipped and manned yards for the construction of the hulls of vessels, but they also had a rigging and sail loft, an anchor smithshop, a block manufactory and all other things necessary to complete sea-going vessels. The ship yard was located on the right bank of the Monongahela, at the mouth of Suke's Run, about where the "Panhandle" Railroad bridge starts across the river. They brought a large force of ship carpenters, joiners, calkers, riggers and other expert workmen for the

proper conduct of the establishment from the East, and when they had ships ready for their initial voyages, these were officered and manned by those who were competent, brought from the maritime cities.

The local newspapers furnish the record of this establishment in the first few years of its existence, in the ships successively turned out by it. The first of these was the *Amity*, 120 tons, launched December 23, 1802. It was completed and in the spring following sailed, with a cargo of flour, to the Island of St. Thomas. The second ship was the *Pittsburgh*, 270 tons, launched in February, 1803, and, when completed, loaded with flour and dispatched to Philadelphia. Both of these vessels left Pittsburgh on April 29, 1803. The building firm was also engaged largely in merchandizing and had extensive warehouses in Pittsburgh. Thurston, the Pittsburgh historian, gives the additional information concerning the two ships first built, that, on completion of their initial voyages, they were sent to Bordeaux, France, and brought back cargoes of wines, brandies and other French goods, part of which they sent in wagons to Pittsburgh.

The third ship built of this line was the *Nanina*, 200 tons, launched January 4, 1804. Others were the *Louisiana*, 350 tons, launched April 6, 1804, and the *Western Trader*, 400 tons, launched in May of the same year. Here an interruption in the newspaper files terminated information from that source, but it is well established that this yard turned out a considerable number of other vessels of the same character in the years following, under the same or other management.

There is record in the same newspaper files of one other ship built in this territory during the period that is being considered, which, unlike any of the others, was launched in the water of the Allegheny River. This was the *Dean*, built in 1802, and according to one of the local papers, the place of its building was eleven miles up the river named. That would place it in the Oakmont-Verona district, the account not giving information as to which side of the stream. The same authority gives the additional information that the vessel "derived her name from her builder and original proprietor." The departure and some other facts concerning this craft are given in an item

The history of the world is a long and tedious story, but it is a story that is full of interest and variety. It is a story that is full of the struggles of the human race, and of the triumphs of the human spirit. It is a story that is full of the adventures of the great explorers, and of the discoveries of the great scientists. It is a story that is full of the lives of the great men and women of the world, and of the events that have shaped the world as we know it. It is a story that is full of the hopes and dreams of the human race, and of the challenges that we face as we move forward into the future. It is a story that is full of the love and compassion that we have for one another, and of the courage and strength that we have to overcome our fears and our doubts. It is a story that is full of the beauty and wonder of the world, and of the glory and majesty of the universe. It is a story that is full of the power and influence of the human mind, and of the creativity and imagination of the human spirit. It is a story that is full of the triumphs of the human race, and of the challenges that we face as we move forward into the future. It is a story that is full of the love and compassion that we have for one another, and of the courage and strength that we have to overcome our fears and our doubts. It is a story that is full of the beauty and wonder of the world, and of the glory and majesty of the universe. It is a story that is full of the power and influence of the human mind, and of the creativity and imagination of the human spirit.

in the "Pittsburgh Gazette" of January 21, 1803, and it is interesting to note that this sailing was more than three months before that of the first two Pittsburgh-built ships:

Sailed, on Sunday last, (16th) from this place for Liverpool, England, the brig Dean, burthen 170 tons. She takes a cargo of cotton at the mouth of the Cumberland River, on freight, by Messrs. Meeker, Denman & Company, merchants of Philadelphia.

In addition to facilities of the Tarascon-Berthoud establishment at Pittsburgh for supplying cordage to vessels of the period, the river valley had another in an extensive rope-walk at Brownsville, the output of which was used largely in the same way. This had an existence as early as 1802 when F. A. Michaux visited the region and afterwards noted it in his "Travels to the West of the Allegheny Mountains" (London, 1805).^{*} There was also a very old rope-walk in the Manchester section of old Allegheny City, now the North Side of Pittsburgh, which must have dated back nearly or quite to the days of ship-building there.

It is surprising to learn that comparisons made at that time showed these vessels for sea service, originating on the western rivers, were, on the average, larger than those which had reached New Orleans, coming from salt water. The "Pittsburgh Gazette," in its issue of December 3, 1803, figured that the river-built vessels averaged 135 tons, while Spanish ships of the same period averaged 90 tons. And the former were larger, on the average, than those originating on the Atlantic Coast of America. Among these vessels built in the interior for ocean navigation, the record for size seems to have been attained by the ship Ann Jane, of 450 tons, launched into the Monongahela at Elizabeth Town (now Elizabeth) in the spring of 1804.

Ships continued to be built in the early years of the nineteenth century at various places along the upper Ohio and its tributaries. It was estimated by a writer of the time and soon afterwards that about one hundred sea-going vessels were built in that territory during the first decade of the century and went forth to ports on the eastern coast, the various islands and European cities. Then began the decadence of these activities.

This came about from various causes, three chief ones being: 1, The difficulties of navigation of this character,

^{*} Edited and annotated by Reuben Gold Thwaites, Cleveland, 1904.

under the most favorable conditions, and the infrequency of the times when it was even possible. 2, The coming of the steamboat, which, because of its greater adaptability to the existing conditions, soon relegated the sailing vessels to a secondary position. 3, The passage of the Embargo Act, under the administration of President Jefferson, in December, 1808. Its object was, by cutting off intercourse with France and Great Britain, to compel them to recognize the rights of American neutrality. By its operation all American vessels were detained in ports of the United States. It remained in operation but fourteen months, but had its certain effects in checking shipbuilding here, as elsewhere in the country.

The first of the reasons above enumerated is set forth somewhat by literature of the time. Zadok Cramer's "Navigator" in its issue of 1811 says: "Misfortunes and accidents in getting these vessels down the Ohio, which most probably arose from bad management in the persons entrusted with them, have given a damp to ship building at the present." The same issue of the publication notes the enterprise of building the pioneer steamboat at Pittsburgh, then under way, and the writer ventures on a prophecy of what its successful outcome would bring about. Only a few years later this prediction read like history, though it fell far short of setting forth all that the steamboat was destined to do for the western rivers and their country.

Estwick Evans, who made a tour on foot through this region, left record of what he found in a book with the ponderous title, "A Pedestrious Tour of Four Thousand Miles Through the Western States and Territories, During the Winter and Spring of 1818" (Concord, N. H., 1819). He made these notes:

An almost innumerable number of steamboats, barks, keels and arks are yearly set afloat upon the river and its tributary streams. The barks are generally about one hundred tons, have two masts and are rigged as schooners or hemaphrodite brigs.

Further statements in the publication from which the above quotation was taken, as well as references found in other writings of the period, indicate that the terms, brig and bark, were often applied to vessels engaged in traffic on the rivers only, and never intended to be taken to the

wider sphere of salt water. These proceeded both up and down the larger rivers, but on the up-stream passage, when the wind was contrary, it was sometimes necessary to employ poles, as in the case of the keelboat.

There were some efforts made to extend ocean navigation for continued service farther up the Mississippi than New Orleans in the period considered in this chapter. In this connection an article in the "Pittsburgh Gazette" of February 23, 1803, is interesting. It is dated Natchez, January 15, and is to this effect:

On Wednesday arrived at this port the ship Mary, Captain Darling, from Boston. She came up with a fair wind and afforded a most pleasant spectacle to a great number of our citizens who assembled on our bluffs, to witness the arrival of the first American ship that has attempted to ascend the Mississippi thus far! Also arrived on the same day the schooner Bee, Captain Bray, from the same port. We are informed that the schooner Nancy, Captain Morris, from Philadelphia, for this port, passed Fort Adams a few days since.

Evidence is lacking that navigation of sea-going vessels very far up the Mississippi ever attained great proportions or extended over a long period. As has been seen, it was only a few years until the production of all such craft in the Ohio Basin was rapidly on the wane. In later years, for half a century after the period which has been considered, there were occasional ships built at yards along the upper Ohio and the Monongahela, but the era of the ship soon gave way, in the main, to that of the steamboat, and that is another story.

World Port Unknown to the World

A story of the old shipping days was treasured through more than one of the issues of Cramer's "Navigator." It was an occurrence related by Henry Clay in Congress. To illustrate the commercial habits and enterprise of the American people, Mr. Clay related an anecdote of a vessel built and cleared out of Pittsburgh for Leghorn:

When she arrived at her place of destination, the master presented his papers to the custom house officer at Leghorn, who would not credit them, and who said to the master: "Sir, your papers are forged. There is no such port as Pittsburgh in the world! Your vessel must be confiscated."

The trembling captain laid before the officer a map of the United States; directed him to the Gulf of Mexico; pointed out the mouth of the Mississippi; led him a thousand miles up it to the mouth of the Ohio; and thence another thousand up to Pittsburgh. "There, sir, is the place whence my vessel cleared out."

The astonished officer, before he saw the map, would as soon have believed that the ship had been navigated from the moon.

A Dear Son, Indeed

The Boat Building Centennial Edition of the "Elizabeth Herald," of which the present writer was editor, was published June 7, 1900. It presented the story given below as a contribution of a reader. It has been met a number of times since in publications setting forth river history, notwithstanding the fact that the contents of that special historical issue of the paper were copyrighted.

John K. Lemon of Allegheny, now 83 years old, contributes through Rev. C. B. Hatch, who interviewed him for this special issue of the "Herald," an interesting reminiscence connected with the early boat building here. Col. James O'Hara had a ship built here at an early day. It was freighted by him in Pittsburgh and sailed from there, via the Ohio and Mississippi Rivers, the Gulf of Mexico, the Atlantic Ocean and the Mediterranean Sea, to Constantinople. Col. O'Hara sent his son along as supercargo.

A successful voyage was made and the ship and cargo were disposed of to advantage, but the younger O'Hara was evidently out for a good time and had it, for on his return home he brought none of the proceeds. He avoided his father as long as possible, but met his mother clandestinely from time to time. Once when they were thus together the elder O'Hara came suddenly upon them, and promptly knocked his son down. The wife and mother exclaimed: "Oh, my dear son!" to which Col. O'Hara replied with considerable warmth, "Yes, madam, he is, indeed, a dear son. He has cost me a ship and its cargo."

The aged Mr. Lemon who tells the story married Mary Kingan, whose family formerly lived here.

CHAPTER XIV

The Coming of the Steamboat—Some Early Built Ones

The steamboat, like various other great inventions, did not come as a sudden inspiration in the mind of one man. Demonstrations of its principle had been successfully made by John Fitch, James Rumsey and others years before Robert Fulton's Clermont successfully breasted the current of the Hudson and triumphantly made the voyage from New York to Albany, to the amazement of the scoffing multitude gathered to see its confidently expected failure. That marked the beginning of the commercially successful application of steampower to navigation, destined to play so large a part in the development of the United States and to have world-wide and commanding influence on commerce.

That was in the year 1807. Beside it set down the astonishing fact that only four years later another steamboat slid into the waters of the Monongahela River, far in the interior of the country as then occupied by the race destined to dominate it; which steamer in its maiden voyage of more than two thousand miles, successfully passed all the perils of rivers hardly more than in their primeval state. The New Orleans, pioneer steamboat on western waters, crude as compared with like craft of later years, was launched at Pittsburgh on March 17, 1811, and successfully performed in the manner intended by its builders.

It might have been thought that the power of steam, after having been successfully demonstrated on one of the maritime streams of the East, would have spread in its application, slowly at first in that neighborhood, and have come gradually into use in that region. Then, after years of successful operation there, some hardy spirit might be conceived as sponsoring the daring experiment of its use on the practically uncharted waters of the Mississippi Basin.

It is true that Fulton and those associated with him did build and operate a few other steamboats on eastern

waters in the years immediately following the first trial of the Clermont. The very earliest of these was the rebuilding and enlarging of that craft itself, which from 1808 operated as the North River. Two others were produced in the same year. But these operations were largely in the further development of Fulton's ideas and in a measure experimental.

The New Orleans was among the first major projects of Fulton and those associated with him after they, in improvement of structure and methods, had more fully demonstrated the feasibility of steamboat navigation. For it was Robert Fulton and his business associates who leaped over the Allegheny Mountains, as it were, and in that early day planted the seed whence sprang the marvelous steamboat activity on the Mississippi and its tributaries in later years.

These early foresaw, in a measure at least, the possibilities of this great waterways system, and wanted to be first to enter upon the promising field. Mr. Fulton had associated with him Chancellor Robert R. Livingston in the early promotion of his projects, and these were owners of the patents under which operations were carried on. Nicholas J. Roosevelt, member of a family which has produced two Presidents of the United States, was chosen by these to represent them in a survey of the situation and conditions, and to secure such information as he could to aid in launching their project. He was given a junior membership in the firm and was sent to the head of the Ohio to make his observations.

Mr. Roosevelt had but recently been married to a lady named Latrobe. When he journeyed overland to the west his bride accompanied him, and with that cruise down the wild waters of the rivers to New Orleans they had a honeymoon trip such as is accorded to few newlyweds. It was undertaken in the face of solemn warnings from many friends that it was foolhardy in the extreme, and there were many predictions of disaster, especially for a woman on such a trip. But the couple were both firm in their resolve to undertake it and did so when all had been made ready. The voyage was made in a flatboat, properly manned, with shelter, furnishings and provisions, and doubtless had all the enjoyment, along with the discom-

forts, of such a journey at that time. Careful observations were made on the way by Mr. Roosevelt concerning matters which he had come to investigate, and the City of New Orleans was finally reached in safety.

The most that has been found in a careful search for particulars of that trip, the operations preceding it and later the building and voyage of the pioneer western steamboat, is contained in a thin volume, "The First Steamboat Voyage on the Western Waters," by J. H. B. Latrobe (Baltimore, October, 1871). Its author was a younger brother of Mrs. Roosevelt. The latter lived to a good old age and Mr. Latrobe's facts were chiefly secured from her. As a boy he arrived at Pittsburgh with his father's family, two years after the building of the first steamboat there, and the place was their residence for a number of years. His boyhood memories were useful in preserving knowledge of some of the other very early steamboats which were launched into the Monongahela, as shall appear.

That flatboat trip down the rivers which, so wholly different from anything she had ever known in her eastern city home, must have been of intense interest, not unmixed with apprehension, to Mrs. Roosevelt. Her letters to her brother, describing some of its exciting experiences, were published by him at the end of his account of the pioneer steamboat and its maiden voyage. They give intimate glimpses and throw interesting sidelights on the journey and some of its episodes.

The boat on which they made the passage, as described in the booklet, was furnished with some extra comforts and conveniences. It is related that it had two separate cabins, one occupied by Mr. and Mrs. Roosevelt and the other by the crew consisting of a pilot, three helpers and a man cook. All along the way careful observations were made and recorded by Mr. Roosevelt of the physical features of the rivers and their adaptability to navigation such as that contemplated.

As it was not necessary on the lower Mississippi to take such observations, the flatboat was left at Natchez and the remainder of the journey was covered more expeditiously in a large rowboat. This passage had further interesting and sometimes exciting experiences, and the correspondence of Mrs. Roosevelt again supplied various

details of these. But suffice it to say that New Orleans was finally reached in safety and in due time the couple were back in New York.

Mr. Roosevelt went back enthusiastic in the belief that the plan was feasible, though he received practically no encouragement from those he met on the journey. Boatmen and others familiar with the rivers were skeptical as to the possibility of up-stream navigation on these waters. They argued that passage on the placid Hudson was an entirely different matter from the many perils of the Ohio, with its bars, riffles, snags, and the swift currents of both it and the Mississippi.

The Roosevelt report was followed by prompt action. In 1810 a company was formed, called the Ohio Steamboat Navigation Company, composed of Messrs. Fulton, Livingston and Roosevelt, with other associates, and preparations were made for putting actual operations under way for carrying forward their project. Another company was projected for the Mississippi. Mr. Roosevelt was again sent to Pittsburgh, as the representative of the Ohio company, this time commissioned to build and operate a steamboat. And again he was accompanied by his young wife.

Roosevelt energy, as exemplified in these latter days, seems to have been a characteristic in this representative of an earlier generation of the family. The keel for the new boat was soon laid and the work of construction went forward rapidly for that time and its facilities. The yard where the hull was constructed was the scene of the earlier ship-building activities of the Tarascon-Berthoud concern, on the Monongahela river front. Not many particulars of the actual work of construction have come down to this day, though the press made mention of the enterprise from time to time. Timber was cut from the neighboring forests and rafted to the scene of operations, and these activities were interrupted more than once by floodtide in the river.

The staunch hull was completed, and as has been noted, launched in March, 1811. From then until autumn was consumed in equipping the boat with means of propulsion and various operations of fitting and finishing. Cramer's "Navigator" in its issue for that year gives the

information that the engine was made by Joseph Tustin, well known and expert in that line of manufacture. Cramer mentions his product on this occasion in the plural, but other references indicate that there was a single engine. The boat had a paddle-wheel on each side, and it is practically assured that these were on a single shaft, extending across the boat. Separate engines and independent action of these were later developments in steamboat operation. The single engine and single shaft construction is given additional support by the report of an eye-witness when the boat was descending the Ohio:

We saw something, I knew not what, but supposed it was a saw-mill from the working of the lever beam, making its slow but solemn progress with the current. We were afterwards informed that it was a steamboat.*

Different figures have been published of the dimensions of the New Orleans. Those of a contemporary publication, it would seem, should be at least approximately correct. When the boat was fully completed she was given a try-out by a trip up the Monongahela from Pittsburgh, of which the "Gazette" of October 18, 1811, contained this report:

With pleasure we announce that the steamboat lately built at this place by Mr. Roosevelt, from an experiment made on Tuesday last, fully answers the most sanguine expectations that were formed for her sailing. She is 150 feet keel, 450 tons burden, and built with the best materials and in the most substantial manner. Her cabin is elegant and the accommodations for passengers unsurpassed. We are told she is intended as a regular packet between Natchez and New Orleans.

The boat, according to Mr. Latrobe's account, cost about \$38,000 to build and equip. She got off on her epoch-marking voyage down the rivers on Sunday, October 20, 1811.* At every place her appearance caused a sensation and, in some, apprehension and terror. In some of the larger places where word of the new steamboat had preceded her coming, public receptions were planned and carried out. This was true at Cincinnati and Louisville.

* Reminiscence of P. S. Bush, a former old resident of Covington, Kentucky, quoted by Archer Butler Hulbert, in "The Ohio River, a Course of Empire."

* "Pittsburgh Gazette." October 25, 1811.

The first of these is the fact that the earth is a planet, and as such it is subject to the same laws of physics and chemistry as any other body in the universe. This is a fundamental principle of science, and it is one that has been accepted for many years. It is the basis of all scientific inquiry, and it is the reason why we can study the earth and its history in the same way that we study other planets and stars.

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The fifth of these is the fact that the earth is a planet, and as such it is subject to the same laws of physics and chemistry as any other body in the universe. This is a fundamental principle of science, and it is one that has been accepted for many years. It is the basis of all scientific inquiry, and it is the reason why we can study the earth and its history in the same way that we study other planets and stars.

The sixth of these is the fact that the earth is a planet, and as such it is subject to the same laws of physics and chemistry as any other body in the universe. This is a fundamental principle of science, and it is one that has been accepted for many years. It is the basis of all scientific inquiry, and it is the reason why we can study the earth and its history in the same way that we study other planets and stars.

There was a detention of a month at the place last named, owing to insufficient water on the falls. Advantage of the occasion was taken to run the boat back to Cincinnati, to the astonishment of the many there who had solemnly averred that it would never run against the current of the Ohio. This long run up-stream was most convincing proof to the contrary.

Experiences of the trip were many and various, including a notable earthquake in the valley of the Mississippi, which greatly changed the course of the stream at places, with confusion to the pilot. But finally New Orleans was safely reached and a voyage completed which marked the beginning of a new era in the development of the Mississippi Basin, and contributed in a large way to the growth of the nation. The Roosevelt family numbered one more on completion of the trip than at its beginning, for during the detention at Louisville a child was born into it.

The new boat was soon running regularly in the trade between New Orleans and Natchez. The venture proved a success financially, but after running two years the boat was snagged, sank and was lost.

The pioneer steamboat of the West, given to the Father of Waters by the Monongahela, having been safely delivered, we now hark back to that little stream and see what further contributions it has. These were destined to be many and vastly important in the years following.

Lists of early steamboats built at and near Pittsburgh were compiled by nautical publications of that period and the years following, and they agree for the most part. A number of them have been consulted in the preparation of this work. Mr. Latrobe, whose account has furnished most of the information in the preceding paragraphs, has one strange lapse. On the first page of his book he says the Vesuvius was the second steamboat built at Pittsburgh, but on page 28 of the same work it is stated that "the second steamboat constructed at Pittsburgh was a small one of 25 tons capacity, called the Comet. She was owned by Samuel Smith, built by D. French in 1812."

The account then goes on to say that the next steamers built were the Vesuvius and Aetna, at Pittsburgh, and the Enterprise, at Brownsville. Various publications extend the list considerably, but the subject cannot be followed

further here, except to say that all of the authorities quoted give the Comet second place. Mr. Latrobe tells that as a boy he saw in succession a large number of steamboat hulls launched at Pittsburgh, beginning with the Vesuvius.

Brownsville saw production of a number of steamboats soon after the New Orleans was launched at Pittsburgh. So the Monongahela's waters had the honor of receiving all of the earliest steamboat hulls—perhaps a score or more—launched in the Mississippi Basin. These earliest boats for the most part did not run in the local waters, but proceeded down the Ohio, on being finished, for activity in that stream and the Mississippi. Some of them operated in the Ohio with Pittsburgh as a terminal port.

There is evidence of one steamboat having been built on the Monongahela very early in the period that this chapter has been considering, but not mentioned in any of the lists of early boats, so far as this writer knows. Its building was ascribed to John Walker who sailed the schooner Monongahela Farmer down the rivers at the beginning of the century. The matter was given publication in the "Elizabeth Herald" of November 4, 1887, a special historical number of the paper, in honor of the centennial of the town's beginning. Here it is:

The date of the beginning of steamboat building in Elizabeth is generally given as 1824 or 1826. Mrs. Antoinette Frew Miller of Allegheny sends the following and has documents in her possession to establish its correctness. This shows that one steamboat was built here considerably earlier. * * * "In 1815 Major Walker built at Elizabeth the first steamboat ever constructed west of the Allegheny Mountains. It was launched upon two ways on May 10, 1815, and was called the Western Navigator. It was a low-pressure boat, with one smoke-stack, had four staterooms and an uncovered paddle-wheel; the owner hearing through Lewis & Clark at St. Charles, Mo., of the famous expedition to the Rocky Mountains. The boat ran below, often trading with the Indians at the mouth of Milk River and Shreve's Ferry."

The lady who wrote this was a descendant of John Walker, the navigator, wife of an eminent Pittsburgh attorney and known to be trustworthy. In at least one of her conclusions she was in error—the statement that this was the first steamboat constructed west of the mountains. But in her statements of facts she was very explicit, with names, dates and descriptions. Of these she wrote the

editor that she had documents establishing the correctness of her assertions. The reference to the Lewis and Clark expedition evidently was due to the fact that the Elizabeth boatyards built some of the craft used in penetrating the region at the headwaters of the Missouri River, on that historic tour of discovery, more than a dozen years before the alleged building of the steamer by Walker. The expedition was assembled at St. Charles, Missouri, where one who later had the steamboat Western Navigator built apparently heard of the facilities of the Elizabeth yard and gave it the order for building the boat.

Earlier Steamboat?

Claim has been made that there was an earlier steamboat than the New Orleans built at Pittsburgh. This assertion is contained in an article communicated to the "Pittsburgh Post-Gazette" by John L. Gans, and published in that newspaper in its issue of November 14, 1927. It was as follows:

It is interesting to note that, as shown by newly available records, the building of the New Orleans in 1811 was antedated three years by the building of the Robert Fulton (at Pittsburgh) by Samuel Frisbee and his brothers.

The authority for this statement is the "Frisbee-Frisbee Genealogy," an exhaustive and authentic history of the family in America, embracing at the time of its compilation 6440 persons. In the biographical sketch of Hezekiah Frisbee, it is related that he and his two eldest sons, Ebenezer and Samuel, all of whom were ship carpenters, "were employed by Robert Fulton in building and launching the Clermont, which, by its trial trip, on the Hudson from New York to Albany, in August, 1807, successfully inaugurated the era of steam navigation." Included in the biography of Samuel Frisbee is a statement of his granddaughter, Mrs. Nancy Maria (Frisbee) Young, born March 24, 1839, which says:

"Late in the fall of 1808, Mr. Fulton sent my grandfather, Samuel Frisbee, to Pittsburgh, Pa., where he built the first steamboat which was a success on what was then called 'the western waters'. In 1853 my brother saw the old boat still lying on the river bank. His grandfather, who showed it to him, told him he had named the boat Robert Fulton, and that Fulton came to see it launched. My mother's uncle was about sixteen at the time and remembered what a time they had at the launching. Some called my grandfather crazy to go out of the world to build boats."

Mr. Gans, who contributed the foregoing article, is a reputable newspaper editor of Connellsville, Pennsylvania, and quotes his authority, but this statement is not wholly consistent within itself. This inconsistency is shown by a careful examination of it, in its setting forth of the relationships and activities of the several Frisbees referred to. There are other reasons why the story is not fully convincing.

Pittsburgh newspaper files of the period have been gone over carefully without finding a line concerning the alleged earlier Fulton boat, said to be built there. It was their custom to make record of such activities through much of the ship building period, and they did it when the New Orleans was built, a little later. The "Navigator" was silent concerning it, and that silence was eloquent, as will be seen. No account of Mr. Fulton's life and achievements, of the many that have been consulted, makes any reference to such a boat at that time and place, and the same is true of histories of steam navigation, as far as can be learned by careful search. And no early writer who set about compiling lists of the first built steamboats seems to have heard of this one.

On the other hand, historians who have told the story of Mr. Fulton's achievements make it plain that the Clermont was not built by hands hired by him, so it is difficult to see how he could have employed the Frisbees "in building and launching the Clermont." It is well established that this work, as well as the later rebuilding and enlargement of the same craft and the construction of three other steamers, built in the East in the same period, was let by contract to "Charles Brownè, a well known ship builder, at Corlear's Hook, on the East River," as one standard work puts it. And his biographers represent him as having so many irons in the fire in the East, at about the time of the alleged building of the boat with Fulton's name, at Pittsburgh, that it would have been most difficult for him to have taken the time for the long jaunt to Southwestern Pennsylvania at that time to "see it launched."

It is recorded that one of the boats built in the East in that period, under the sanction of the Fulton and Livingston interest, was for the navigation of Long Island Sound, and was given the inventor's name, with his implied con-

It is a well-known fact that the medical profession has been the subject of much criticism and attack in recent years. This is due to many causes, but the most important of them are the following: (1) The medical profession has been accused of being a monopoly, and of using its power to the detriment of the public. (2) The medical profession has been accused of being a body of men who are not interested in the welfare of the patient, but only in their own pockets. (3) The medical profession has been accused of being a body of men who are not interested in the progress of medicine, but only in the maintenance of their own position.

It is true that the medical profession has been the subject of much criticism and attack in recent years. But it is also true that the medical profession has made many valuable contributions to the progress of medicine. It is true that the medical profession has been accused of being a monopoly, and of using its power to the detriment of the public. But it is also true that the medical profession has been the subject of much criticism and attack in recent years. It is true that the medical profession has been accused of being a body of men who are not interested in the welfare of the patient, but only in their own pockets. It is also true that the medical profession has been accused of being a body of men who are not interested in the progress of medicine, but only in the maintenance of their own position.

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sent. It seems most strange that if the hulk of the alleged old boat remained on a river bank at or near Pittsburgh nearly half a century after its building, with such a history as claimed for this one, its identity should be so completely hidden from all except the one man who told the story as never to have gotten into the local prints in all the years.

Finally, here is something from Cramer's "Navigator," published in Pittsburgh in 1811, in noting the New Orleans project: "There is now on foot a new method of navigating our western waters, particularly the Ohio and Mississippi Rivers. This is by boats propelled by the power of steam. This plan has been carried into successful operation on the Hudson River in New York and on the Delaware between New Castle and Burlington." The account cites performances of these boats, and then it is added: "From these successful experiments, there can be little doubt of the plan succeeding on the western waters."

Is it probable, if there had been such a boat as the alleged Robert Fulton, built there so recently and successfully operated, that this journal, devoted to local navigation, would have failed to note it in this connection?

CHAPTER XV

The Steamboat Building Era

Nearly all of the early steamboats built on the shores of the Monongahela and launched into it were not intended for navigation of its waters, and so it continued through the years when the boat building industry there had attained vast proportions. Steamboat traffic on this river became in time the greatest of any stream of its size in the country, but in the heyday of the building industry much of the greater part of the vessels turned out from the yards along its shores had their subsequent activities on other rivers of this country, and even beyond its borders. By the middle of the nineteenth century it is doubtful if there was a navigable river in the Mississippi Basin that did not have a Monongahela-built boat or boats in its waters.

Some reasons for the great growth of the industry here are apparent. It has been seen that a number of places along the stream had their origin and early growth in the building of river craft for the conveyance of a migrating population. The successive eras of the flatboat, the keelboat and the ship had established well equipped yards at various places, manned by considerable forces of expert workmen in this line. Vast forests of the best kinds of wood for the purpose were right at hand in the first place, and when these began to show signs of depletion the apparently inexhaustible stands of timber in the upper valleys of the river and its tributaries were drawn upon.

The lumbering industry in this supply would in itself make an interesting story, but that cannot be gone into in detail. There were the camps in the dark woods where roystering lumberjacks laid low the giants of the forest, and divested of their limbs the main trunks of the trees, chiefly oaks. The logs were hauled, with much toil and often much profane urging, by sweating horses and oxen, to places of assembling on the river. Here great rafts were

2. Summary

2.1. Summary of the results

The first part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.1) as $t \rightarrow \infty$. It is shown that the solutions of (1.1) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$. The second part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.2) as $t \rightarrow \infty$. It is shown that the solutions of (1.2) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$.

The third part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.3) as $t \rightarrow \infty$. It is shown that the solutions of (1.3) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$. The fourth part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.4) as $t \rightarrow \infty$. It is shown that the solutions of (1.4) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$.

The fifth part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.5) as $t \rightarrow \infty$. It is shown that the solutions of (1.5) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$. The sixth part of the paper is devoted to the study of the asymptotic behaviour of the solutions of the system (1.6) as $t \rightarrow \infty$. It is shown that the solutions of (1.6) are bounded and that the norm of the solution tends to zero as $t \rightarrow \infty$.

made up, the logs being ranged side-by-side and securely bound together, with cross poles held by staples and pegs, but all of wood, that there be no chance of iron remaining by inadvertence in the logs, to the ruination of saws in the boatyards. A hardy race of dare-devil raftsmen brought the unwieldy bodies of logs to the yards, guiding them through the devious channels and over the riffles in the passage. In later years it came that much of the wood that went into the boats was brought from the valley of the Allegheny River, though largely this was of the softer grain lumber for deck planking and the upper structure of the vessel.

There were water-driven sawmills built and operated early in the industry, but much of the lateral separation of the logs was done by the primitive process of whip-sawing, which persisted in some degree through many years of the period. In this operation the log was laid on cross pieces over a long pit dug in the ground. In the pit was a man who drew the saw down and followed it as it slowly progressed on its course, while another, standing on the top of the log, pulled the saw up. It was hard work, but a surprising number of planks could be sawed out thus by two stalwart men in a day.

But this was slowly supplanted by the improvement of the mill and its processes. The frame saw was one in a fixed place which moved up and down through the log which was clamped on a carrier that was propelled slowly by cog gearing, all being operated by the power employed. This power, as has been said, was at first water, flowing under or over a wheel, but later steam was used. A later development of frame sawing was with the gang-saw, supplementing the single blade. In this contrivance a number of parallel saw blades were fitted in the same frame and all moved through the log in the same operation. They could be set at different distances apart, to produce the desired thickness of planks.

The planks thus made had their edges hewn into the many curious forms required. This result was accomplished with the aid of the ordinary chopping and the broad bitted hewing axes, and in the curves the adze also had to be employed frequently. These many shapes had previously been marked on the planks by the draftsman,

and "hewing to the line" passed into a proverb, as expressing careful following of directions in any operation. A later development was the "muley" saw, a narrow blade in a frame, which in large measure did the work of shaping the edges of planks and timbers previously done with axes. With it the piece was manipulated in the hands of a skillful sawyer, on a table through which the saw passed, as he carefully kept to the line marked out. The circular and band saws came in when the wooden steamboat construction was passing out.

It has been seen that the first steamboats built on the Monongahela were at Pittsburgh and that Brownsville was the second in point of time in the industry. Elizabeth, beyond reasonable doubt, was third. After the product of 1815, with account of which the last chapter closed, it is well attested that Walker and Stephens began construction of steamboat hulls there in 1824. They launched their first boat in 1826 and they and others continued in a growth of the operations until, near the middle of the century, this little town was turning out more steamboat hulls than any other place in the United States. Port Perry, at the mouth of Turtle Creek, McKeesport, at the mouth of the Youghiogheny, West Elizabeth, Monongahela, Webster, Belle Vernon, Fayette City and California, all in the years following witnessed great activity in this industry. A few places above Brownsville, as Fredericktown, Millsboro and East Riverside, built a few hulls from time to time, but the main section of operations was the fifty-six-mile stretch from the river's mouth to Brownsville.

The first steamboats built for these rivers conformed to the round-bottom ship type of hulls, but this form soon gave way to the flat bottom, as better adapted to the river navigation, with its many shoal places. At first the boilers were set in the hull, but with the flat-bottomed hulls they were shifted to the main deck. These changes of design, with the wide and flat bottom, were all planned for reducing the draft and making the vessel, as nearly as possible, to skim over the surface of the water rather than to plow through. So did this design tend that a later captain boasted that his boat could run in the sweat on a pitcher of water!

In all of these places the operations were confined

largely to the construction of the hulls only. These were framed, planked over, provided with main deck, calked, pitched and supplied with bitts and timbers for supporting the engines and wheels. As a rule, the superstructure entire, with propelling wheels and rudders, the boilers and all machinery and pipes, were constructed and supplied at Pittsburgh, to which point the hull was floated after being launched. However, Brownsville early was supplied with facilities for cabin building, boiler and engine factories. The practical result was that nearly all boats the hulls of which were built at Brownsville, and they were many, were fully completed there, the others at Pittsburgh. But there were exceptions to that rule, for record remains that occasional hulls, launched farther down the river, were towed up to Brownsville for undergoing the finishing processes.

The year 1846 marked the beginning of a period of about a dozen years when steamboat building along the Monongahela registered high tide. More than half a hundred hulls made up the annual average of launches in that period in the yards along the Monongahela and upper Ohio. In that time Elizabeth attained and continued to hold the leading place among all the towns of the section in this industry. Its four yards, besides one in West Elizabeth, were kept constantly busy. John Lambert, an old boatman of the place, told this writer many years ago that he had seen fifteen steamboat hulls and one schooner hull under construction at one time in Elizabeth and one or more in West Elizabeth. In speaking of Elizabeth in one of its issues in these busy years, Harris's "Directory" said: "Here it is believed more steamboats have been built than at any other place in the United States." This product when finished went to all parts of the country and some of it beyond the national borders.

At one of the Walker yards in Elizabeth in 1844 was built the hull of the J. M. White, famous for being "the fastest boat that ever turned a wheel on the Mississippi River." Its run from New Orleans to St. Louis in a little less than four days and nights set a mark which was never equalled under like conditions. Wood was used for fuel and stops had to be made from time to time to restock with it. Years afterwards, elapsed time in making the same run was cut somewhat by a boat which was supplied

with coal fuel en route, taking the coal from a flat without stopping.

Not only did this boat gain renown for swiftness, but her designer, William King, became famous throughout the whole Mississippi Valley. To a peculiarity in the lines of the hull design, by which a great swell (wave), thrown to each side, was caught by the wheels, set further back than usual, added impulse was given, and to this fact was attributed the great speed attained by the boat. When the White was later destroyed, King superintended the construction of a counterpart successor, under the same name, and it developed like great speed. He was inordinately proud of his work, but always refused to exhibit the lines of his plan on which these boats were built. He would say that whenever someone designed a boat that would beat the J. M. White's speed, he would produce a faster one. He even destroyed a beautiful model of the original boat, which he had made on the exact lines and with infinite care. So exact knowledge of his secret died with "Billie" King!

According to the records of enrollment, Brownsville ranked second in the number of hulls built when steamboat construction was at its peak along the Monongahela, but there were busy yards at the various other places already named, and the total construction put this valley far in the lead of all other sections of the country in this product of the middle century. Boatmen and shippers came from all parts of the Mississippi system of rivers to have boats built, and a number of hulls of boats for navigation on California rivers were set up here, then taken apart and shipped to their destinations, again to be set up, completed and operated on those streams. In a little later period boats were built and shipped similarly for use on rivers in South America. West Newton and a few other points on the Youghiogeny figure somewhat in the boat building record of the fifties.

High tide in the building of steamboats along the Monongahela continued well through that decade, and then subsidence began to be manifest. Various causes contributed to this decline. The financial depression which began in 1857 had its effect, though that particular year showed the largest number of boats enrolled in the Pitts-

burgh custom house in any year, a total of 74. The building of railroads in various parts of the country resulted in the diversion of much traffic, both in passengers and freight, from the river to the rails. The Civil War interrupted and greatly cut down the operation of navigation on rivers of the Central West. When it was over this activity did not come back for these rivers as it had existed in the years before. There came a great coal carrying trade, but that movement will be treated in a succeeding chapter.

During the Civil War a number of gunboats were built for the United States Government at Pittsburgh, and rendered good service on the Mississippi. They were of wood, but heavily iron-clad. These were entirely equipped at the place of building, the city at that time turning out many cannon for the government. Towards the end of the century hulls of entire steel construction began to be built, and now wooden construction of all kinds of river craft has given way to steel.

George H. Thurston, in "Allegheny County's Hundred Years," published in 1888, says concerning boat building in the district being considered:

There have been over 3000 steamboats and ships constructed at Pittsburgh and vicinity since 1811, until 1888—about 1,000,000 tons; and the value of the vessels so constructed, as nearly as can be estimated, is about \$50,000,000. In this is not included the barges, many of which carry from three to five hundred tons; nor the coalboats of equal capacity, the number of which, for the reason that they are not registered, cannot be arrived at, and consequently neither can their aggregate tonnage. If it could, it would probably more than double the aggregate tonnage.

Launching the Boat

The launching was the culminating point in the building of the boat, in the old days of wooden construction, and the event was made to some extent a gala day. Crowds gathered to see the sight, and usually a goodly number went on the deck for the boat's first plunge into the water. For the winding up of this chapter the author has chosen

as appropriate his description of such an event, written a third of a century ago:*

Sometimes there was the christening ceremony of breaking a well-filled bottle over the prow of the vessel, but that custom never became very general here. In the early days, when it was considered only the part of hospitality to pass the decanter and glass to all who came beneath one's roof, the sturdy old boat builders seemed to think that a better use could be found for a liquid with alcoholic content than pouring it over oaken planks!

A large vessel of egg-nog was always prepared for a launch, and this had a prominent place in the yard shed, with tin cups convenient and a general invitation to all to partake. Later this sometimes gave place to a keg of ale. * * * But the growth of temperance sentiment finally led to the omission of this once always present feature of a launch.

Another early custom was the firing of a cannon just as the boat glided down the ways, but a tragic occurrence led to the abandonment of this feature. The cannon was loaded and primed for the occasion, but by some means it was prematurely put off and a youth * * * was instantly killed, his head being blown off by the shot.

The boat was usually built so as to go into the river stern-foremost, though occasionally it was let in sidewise. It was set up on a row of blocks under the keel, and shores (posts)** supported it around the sides. Before the launch, ways, (two if an endwise launch, more if sidewise) were constructed under the boat and leading by an easy declivity to the water. These were thoroughly greased, and then smooth timbers to slide were laid on them and the spaces between these and the bottom of the boat were strongly built up with blocks. Each way and its slide were firmly lashed together at one point by a loosely twisted rope passed around and around them. Then wooden wedges were driven in between the top blocks and the bottom planks of the vessel, taking the weight off the keel blocks and shores.

Then the blocks were removed from under the keel, and at a command the shores were knocked from under the guards of the boat. The men were distributed along both sides of the vessel for this work, and during the minutes that it lasted there was a bedlam of sound, as the mauls descended on the shores and they were, one by one, knocked from their places. This done, only the "lashings," held the boat to the spot where it had slowly grown into being, and a man with a keen-edged, broad-bladed axe stood beside each of these, ready to strike the blow which would sever the cords and release the vessel, poised and eager for her element of the future.

It is a time of suppressed excitement. The din of the blows and the falling shores is suddenly succeeded by a silence that is intense. Every breath is held and all listen for the words which shall free the

* "Boat Building Centennial Edition of the Elizabeth Pa., Herald" June 7, 1900.

** In the vernacular of the boat builders of that day, "bill-shores."

is a further factor in the development of the management of
"high blood pressure."

It is possible to prevent, or at least to delay, the development
of "high blood pressure" by the use of certain foodstuffs. The
dietary management of "high blood pressure" is a subject of
great importance, and the following suggestions are offered for
the consideration of the physician and the patient.

1. The diet should be rich in potassium, and should be low in
sodium. Potassium is found in the following foods: bananas,
potatoes, apricots, raisins, and figs. Sodium is found in the
following foods: salt, and in many of the condiments and
pickles.

2. The diet should be rich in calcium, and should be low in
phosphorus. Calcium is found in the following foods: milk,
cheese, and eggs. Phosphorus is found in the following foods:
meat, fish, and bread.

3. The diet should be rich in magnesium, and should be low in
nitrogen. Magnesium is found in the following foods: whole
wheat flour, and in many of the cereals. Nitrogen is found in
the following foods: meat, fish, and eggs. The diet should
also be rich in iron, and should be low in fat. Iron is found
in the following foods: meat, fish, and eggs. Fat is found in
the following foods: butter, oil, and lard. The diet should
also be rich in vitamins, and should be low in calories. Vitamins
are found in the following foods: fruits, and vegetables. Calories
are found in the following foods: sugar, and alcohol.

4. The diet should be rich in fiber, and should be low in
cholesterol. Fiber is found in the following foods: whole
wheat flour, and in many of the cereals. Cholesterol is found
in the following foods: meat, fish, and eggs. The diet should
also be rich in potassium, and should be low in sodium. Potassium
is found in the following foods: bananas, potatoes, apricots, raisins,
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vessel, tugging as a hound at the leash. Soon comes the sharp command: "Cut lashings!" The gleaming axes descend—the cords are severed and fall, writhing like living things from the suddenly released great tension on their strands—the vessel starts, moving slowly at first, but soon gaining momentum, and gliding with ever-increasing speed down the ways until she strikes the water with a great splash, and a moment later rides proudly on the bosom of the river, a thing of grace and beauty. Longfellow has described graphically a similar scene in his "Building of the Ship":

"Then the Master,
With a gesture of command,
Waves his hand;
And at the word,
Loud and sudden there was heard,
All around them and below,
The sound of hammers, blow on blow,
Knocking away the shores and spurs.
And see! She stirs!
She starts,—she moves,—she seems to feel
The thrill of life along her keel,
And, spurning with her foot the ground,
With one exulting, joyous bound,
She leaps into the ocean's arms."



CHAPTER XVI

The Days of the Old Steam Packets

It has been seen that the pioneer packets on the Monongahela were keelboats, the word packet being used for that which the dictionaries call "a vessel making regular trips." Keelboats continued to run for the conveyance of passengers and freight long after steamboats were first seen on the river, for, as has been seen also, the earliest steamboats had their operations on rivers other than those whose waters first received them when they were launched. Newspapers of the time tell that the first steamboats built at Brownsville began running between that place and Louisville, Kentucky, but it is not stated with what regularity these trips were made, if, indeed, they had any regular schedules, nor how long this arrangement continued. Evidence is lacking that either of them ascended the Monongahela above Pittsburgh more than once. They can hardly be said to qualify as packets on the Monongahela. Their running was chiefly on the Ohio at first and soon exclusively on that stream and the Mississippi.

An advertisement of John Walker of Elizabeth, published in the "Pittsburgh Gazette" of January 15, 1815, shows that he was running a boat, the *Torpedo*, between Elizabeth and Pittsburgh. The schedule announced was one which it would have been difficult for a keelboat to maintain, but the character of the craft is not revealed in the advertisement. Walker is shown in the last chapter preceding to have built a steamboat a little later in this year 1815. Could the *Torpedo* have been a steamer? The speculation is interesting, but it is only a speculation.

Thompson Martin, then an aged resident of Elizabeth, told this writer in 1887 that he passed up the Monongahela River 35 miles from Pittsburgh in 1823 or 1824 on the steamboat *America*. Soon thereafter it is certain that boats were running on regular schedules between Pitts-

burgh and Brownsville. By that time there was, in addition to much passenger business, a large traffic in products of the region, not only what the fields and forests produced, but iron in different forms, glass, flour, whisky, lime and other manufactured commodities. The steamboats got their share of these things, but, in addition, there were still many hand-propelled craft, such as keelboats and flats, navigating the river long after the appearance of the steamers and handling an extensive trade. They could penetrate the smaller tributary streams where the steamboats could not ordinarily go, and ply the main stream when there was not sufficient water to float their swifter competitors. This condition persisted through all the time of the river's pristine condition and well into the period of slackwater navigation.

A development which had much to do in stimulating early trade on the river was the completion of the National Road from Cumberland, Maryland, to Brownsville. This road created much trade and diverted more from other channels, both in passengers and freight. More steamboats were added to carry the growing business of the river. This growth continued through later years, but did not have its full development until slackwater improvement was completed between Pittsburgh and Brownsville in 1844. However, the first two of the four dams and their locks, in the lower section of the stream, had been completed three years before then, giving great impetus to steamer trade for about twenty-five miles up the stream.

There had been many little steamers running on the river with more or less regularity before these dates. By 1837 two boats were being operated regularly between Pittsburgh and Brownsville, making three round trips each week, and touching at intervening valley towns. Harris's "Directory" in noting this arrangement, added: "A company has been chartered and organized for the improvement of the navigation of the river, and about \$150,000 of the stock subscribed. In addition to this amount the United States Bank of Pennsylvania has yet to subscribe \$50,000."

The fact last mentioned was a requirement of the Legislature of Pennsylvania as a condition of issuing the bank's charter. This requirement, along with the generous

burgh and Brownsville. By that time there was in addition to much passenger business, a large traffic in products of the region, not only what the fields and forests produced, but iron in different forms, glass, flour, whisky, lime and other manufactured commodities. The steamboats got their share of these things, but in addition, there were still many hand-propelled craft, such as keelboats and flats, navigating the river long after the appearance of the steamers and handling an extensive trade. They could penetrate the smaller tributary streams where the steamboats could not ordinarily go, and by the main stream when there was not sufficient water to float their swifter competitors. This condition persisted through all the time of the river's pristine condition and well into the period of slackwater navigation.

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help given by the State to canal development and its later subscription to the stock of the Navigation Company, indicates its liberal attitude to public improvement, especially as this attitude pertained to waterways. The action here noted brought embarrassing complications later, as will be set forth in another chapter.

The Pittsburgh and Brownsville Packet Company was the concern which for many years had a leading part in the operation of passenger and freight carrying boats on the Monongahela. Its stock was owned largely by people of Pittsburgh and the Monongahela Valley. It started with two side-wheel boats which ran until worn out and were then succeeded by others.* These in turn gave place to others, and of more than a score of boats owned and operated by this concern and its successor, in about seventy years of activity, only two, the Medium and the John Snowdon, were of the stern-wheel type.

But if they remained true to type in general, there was constant improvement in structure and embellishment until the boats came to be veritable floating palaces. Their lines were graceful and many little details of ornamentation were provided. They were kept immaculately white in woodwork and shining black in exposed metal parts. The cabin ran the entire length of the interior on the second deck (for some reason known to steamboatmen as the "boiler deck," though the boilers were never on it). The aft portion of this long saloon was the ladies' cabin, more elegantly furnished and finished, and which could be curtained off from the main room. Staterooms extended all along the two sides of the long and narrow cabin, with outer doors and windows on the promenade guards which extended all around the vessel except where interrupted by the wheel-houses. Other doors communicated with the cabin.

Meals were served on long tables spread in the main cabin, and the cuisine was noted for its excellence. The

* The order of succession among the earliest ones may not be accurate, but the following are the boats which were operated by the Pittsburgh and Brownsville Packet Company and later by the Pittsburgh, Brownsville and Geneva Packet Company: Consul, Josephine, Louis McLane, Medium, Baltic, Atlantic, Lucerne, Redstone, Jefferson, Telegraph, Gallatin, Franklin, Fayette, Elisha Bennett, Chief-tain, Elector, Geneva, John Snowdon, Germania, James G. Blaine, Adam Jacobs, I. C. Woodward, Columbia.

staterooms provided accommodations for night travel, two berths to each, one above the other. Stewardesses, always Negro women, looked after the comfort of the ladies and care of the staterooms, and other help attended to the wants of male passengers. A well stocked bar was always on hand for the thirsty. After the roustabouts on the lower deck and the help already referred to, the most lowly position was that of the cabin-boy, but it was one much sought and it was the primary school in matters nautical for many a youth who afterwards attained a position of trust and honor in handling steamboats. The cabin-boy kept the fires and lights going in the cabin and was general handy man.

Three lines of promotion were open to the cabin-boy who made good: He could become a "striker" for the engineer, with the hope of some day having his license and himself presiding over the engine room. He could become a cub-pilot, which gave the training necessary for handling the wheel with authority. He could become the "mud-clerk," with the glorious possibility of ascending through the positions of chief clerk, mate, and finally command of a boat as captain. A duty of the mud-clerk, which gave the position its name, was that of assisting lady passengers up and down the slope of the long plank thrown from the forecastle deck to the shore at way landings. He would gallantly take her hand and lead the fair one to the desired destination. On occasions he has been known, on arriving at the muddy shore, to take up the shrinking passenger and stalk through the mire while bearing her to a footing high and dry.

Over this line of travel passed many noted men in the palmy days of the steamboat. Henry Clay was but one of various eminent statesmen who, in journeying between their homes and the National Capital, traveled by boats up the Ohio and Monongahela, thence by stage, or reversed means of travel on the homeward passage. William Henry Harrison voyaged up the rivers in a succession of ovations when he was on his way to Washington in 1841, to be inaugurated President, and only a few weeks later his dead body was borne back on a boat on the way to its burial. He was but one of a host of illustrious men carried by the river steamers in the days of their supremacy.

Steamboating then had its perils, more pronounced than in later years when conditions were somewhat changed. The river had not been cleared and dredged and there were lurking dangers from sunken rocks and snags, either of which might puncture the hull and send the vessel to the bottom. The snag of chief concern was a sunken tree trunk with stout branches protruding. If one of these projected up diagonally and pointing towards the approaching steamer, collision with it was likely to drive it through the sheeting of the hull. The sawyer was a snag with one end of the log fixed in the bottom of the stream and the other end swaying up and down with the motion of the water.

Due, probably, to absence of safeguards which a later age has supplied in better material, better methods of construction and the adding of safety devices, boilers of steamboats were prone to explode with a frequency and results which were disquieting. High pressure of steam had to be maintained, and when the jacket or flues of a boiler let go the results were sometimes appalling. Sometimes the boiler would be blown entirely off the boat, leaving shattered wood works in its path and often bringing death or injury to one or more persons from its impact or the effects of the scalding water and steam. Among many such cases, the records of which remain, only one can be noted here.

In 1850 a flue in one of the boilers of the Pittsburgh and Elizabeth packet, Fashion No. 2, exploded while the boat was in Lock No. 1. Four persons were killed outright, some of them being blown into the river and others horribly scalded. The boat was badly wrecked. This writer later talked to some of the survivors. He also, when a boy, heard the cannon-like report of an exploding boiler on a pumping boat. When the craft was seen, a few minutes later, its whole upper works resembled kindling wood. The rent boiler shot upward and went hurtling to a probable height of 500 to 600 feet in a rocket-like flight, striking in the water about a like distance from the base of its flight, and was found on the bottom of the river later.

Ice provided another peril to which the boats were exposed from time to time. Most damage of this character was wrought on occasions when the river had been

long frozen, in a prolonged period of frigid weather, and the heavy ice went out on flood stage. This was usually caused by rainfall at the headwaters and sudden rise. Of many such, the most disastrous ice flood in the history of the river was that in January, 1877. The river was ice-bound from end to end, and at places the coating was as much as twenty inches thick. Many steamboats were swept away and destroyed, among them two of the big passenger packets at Brownsville, and a large number of coal craft, much of it loaded. The total of losses ran into millions of dollars.

Fire also was an ever present menace, and in the history of Monongahela navigation many fine boats went up in smoke.

Early in its career the Pittsburgh and Brownsville Packet Company effected arrangements for carrying through passengers and freight to and from points on the seaboard, in connection with stage-coaches on the National Road and the Baltimore and Ohio Railroad which had reached Cumberland, Maryland, from the East. Connection was made at Pittsburgh with boats running between that place and ports on the Ohio and Mississippi Rivers. This was the beginning of a through traffic which grew to huge proportions for its time and the years following. Beauty of scenery, comfort of travel, convenient and quick transit, as these things were then regarded, made the route a favorite one and attracted hosts of travelers.

Many travelers on the river in the passenger packet days bore testimony to the beauty of its scenery, for it had charm in every mile. Running, for the most part, between high and densely wooded hills, the stream's sweeping curves unfolded a constantly changing panorama of delight. Where the valley was broader, stretches of rich farm land were revealed, with prosperous towns making their brave array and pretty villages nestling cosily between.

Soon after the start of the Pittsburgh and Brownsville line it was given the carrying of mail along the valley, and when later it had opposition, it came to be known popularly as the Mail Line. The valley above the mouth of the Youghiogheny did not have telegraph service until the year 1866, and the telephone came years later. So the day boat, carrying the Pittsburgh morning papers as well as

the mail, brought the first news of the day from the outside world.

But the boats running from Brownsville to Pittsburgh also had an important part in the dissemination of the news. They bore mail from the East, on which the Pittsburgh papers largely depended for their general intelligence, before they began to make use of the telegraph. The night boat carried much of this sort of news that appeared in the morning papers following, while the day boat often helped out materially with the late editions of the afternoon papers. On more than one occasion, when an editor had reason to believe that something of unusual importance might be expected thus, a printer with full cases of type was sent to Brownsville. If the mail brought the information desired, the story was set up on the journey back to Pittsburgh, the type quickly transferred to waiting forms there, and the paper registered a beat of more or less importance on its competitors. So the tip and the scoop played their parts in the newspaper game nearly a century ago, even as they yet do.

During the Civil War the coming of the morning boat out of Pittsburgh was the event of prime importance each day to every town reached thus. Its coming was awaited by crowds who quickly took possession of the papers and eagerly—often apprehensively—searched them for word from the front. The casualty lists were scanned with fear that the name of some loved one would be found there—tidings, alas! not infrequently found by some parent, wife or other relative of one of the boys in blue!

It was to such crowds, inured to such scenes by four years of them, that the steamer Fayette brought tidings on the morning of Monday, April 10, 1865, of the surrender of General Lee and his army to General Grant, and the virtual ending of the war. The papers then had the advantage of the telegraph, and had the news the night before. The boat was a new one, only a few weeks in the trade, and was gaily decked with flags and bunting from stem to stern. Her coming was announced before her appearance at the town where it was heard by this writer as a small boy, by the constant blowing of whistle, clanging of great bell and repeated blasts of a cannon planted on the deck of the forecastle as rapidly as it could be loaded and fired.

The entire population was at the landing as soon as the boat arrived there, still keeping up its din. When the import of this became known, there were scenes of joy which had every sort of manifestation. People were cheering, shouting, crying, embracing one another or dancing, as moved by temperament. And so it was at every landing reached by the boat with her tidings of joy. And in the towns bells were rung, whistles blown and every flag that could be found was flung out; processions filled the streets and in the evening houses were illuminated, as repeatedly had been done in the years before when word came of an important Union victory.

Only five days later came another boat with tidings of vastly different import, for the old steamer Telegraph brought word that President Lincoln lay dead in Washington, stricken down by an assassin's bullet. It was a rude and sudden revulsion of joy into mourning, and one observer of the scenes, though a small boy then, vividly remembers seeing people reading from black-bordered columns of newspapers, sad of face, many with tears streaming down their cheeks, and some in stunned silence, unable, apparently, to fully credit the appalling announcement. The boat which brought the news was festooned with black cloth, and soon similar emblems of mourning were being hung out from homes and stores, and mingled in the folds of flags at half-staff everywhere.

But the sentiments which found expression on the first of the occasions described were not quite universal. Among the many loyal to the cause of the Union were a few who sympathized with the South in the struggle just then terminated, known to many of that period as "Copperheads." The Fayette City section, originally settled largely by Virginians, was noted particularly in that respect. At its landing the steamer Fayette's salvos of rejoicing were met with a shower of stones from the shore when she touched there, resulting in a broken arm for a passenger and many broken windows. Feeling ran high in those days.

Improvement of the river in its upper reaches extended the packet runs up to New Geneva* in 1860, and it was thirty years later that these works carried slackwater navigation to Morgantown, West Virginia. Still later the United States Government, which had come into control of the slackwater improvements, completed canalization of the remainder of the main stream, carrying this work to Fairmont. In the years intervening the packets had carried on marvelously, but the end for them came soon after the river had been made navigable for the entire extent of its main stream.

In that time there had sprung up, from time to time, opposition lines, to contend for a share of the carrying trade. But so thorough was the organization of the old line and so well did its service meet the needs, that these rival movements were, as a rule, short lived. The boats that thus entered into competition were usually inferior in size and the facilities they offered were inadequate to draw any large volume of trade away from the established line. In the latter sixties came the most formidable rivalry this line ever had to contend with, and for a few years there was staged on the Monongahela a contest between two lines of packets whose intensity is still remembered and discussed by old-timers among residents of the valley.

In the latter part of the year 1865 a company was formed, under the name of People's Line of Steamers, and contracts were let for the building of two boats. These were of the same type as the large side-wheelers long in use on the river, and when completed were of the latest in design and appointment. These were named the Chief-tain and the Elector, and they were launched in the spring of 1866, entering upon the trade between Pittsburgh and Greensboro (opposite New Geneva) at once. The line started with announcement that abuses had grown up in the old line, due to the fact that it was a monopoly, placing an undue tax upon the public. Reduced rates of passenger fares and freight charges were announced.

This challenge was met by the old line in kind and soon a hot rivalry was on. Boats of the two lines would

* The packet company cut the name to Geneva in its second title of incorporation and common usage soon gave that designation popular acceptance, but Albert Gallatin's original name, New Geneva, persists to this day, for so the postoffice is officially designated.

leave each end of the run at the same hour and, although racing was in violation of the law, it was not long until it was being witnessed in most exciting form. On leaving the Pittsburgh wharf, a decided advantage was gained by the boat which first passed Lock No. 1, a mile above, for the boat first clearing it could lead for a considerable distance and have the best opportunity of picking up business along the way.

The result was an almost daily race there. In approaching Lock No. 3, passengers for Elizabeth, two miles below, were often induced to proceed on to the lock, by a refund of fare and sometimes a cash bonus in addition, so that a landing would not be necessary, with its delay to the boat then in sight of the lock, and also of the rival steamer bent on the same accomplishment. Passengers with time to spare would even be induced to make the trip to Brownsville and back, with free meals and staterooms, to avoid the stop when the boat was in a close race. And such scenes were often repeated on the downward trips.

The rival lines had runners out on the wharf at Pittsburgh, offering all kinds of inducements to secure business or prevent the rival line from getting it. Along the way, passengers and freight would sometimes be passed, unheeded, when one boat was being closely pressed by another. The rivalry soon resulted in factions among the people along the route, and feeling often ran high among these, when partisans of the respective lines grew heated in their championship. These controversies sometimes reached the knock-down stage of enthusiastic support when adherents of the "Old Line" and the "New Line" came in collision, especially if this was in a bar-room, with its incitements.

Exciting scenes were presented on the occasion of a night race, when two boats sped past, with furnaces roaring, steam hissing and long banners of flame trailing from the tops of the tall smokestacks, as stokers fed the furnaces with all they could consume.

All this had the inevitable result of heavy losses on both sides. Charges and counter-charges were made against boat officers, with resulting suspension of licenses of some by the inspectors. Then the matter got into the courts, with grand jury presentments in which serious

charges were made against officers of both lines. All these things led to overtures for peace being made and the result was a consolidation, after destructive rivalry had continued for three years. The two boats of the new line and two of the old one were retained, the remaining two of the old line being put up for sale. The name of the organization thus formed was the Pittsburgh, Brownsville and Geneva Packet Company.

Through the years there were many packet lines of shorter runs on the river than the ones just considered. At different times Pittsburgh and McKeesport lines were maintained and also like service between Pittsburgh and Monongahela. Later there were short runs, not reaching either terminal, proceeding out of McKeesport, Elizabeth, Monongahela, Belle Vernon, and various ones out of Brownsville and Morgantown.

But the short run which persisted longest and took its place as one of the institutions of the river, along with the Pittsburgh and Brownsville line, was that between Pittsburgh and Elizabeth. With the exception of its earliest one, this line ran boats of the large side-wheel type and served a large constituency with passenger and freight service in its field. Its home port was Elizabeth, where it was owned principally, and its boat made round trips daily except Sunday. The company was organized about 1849 and operated boats continuously for more than fifty years, there having been six of these in this trade in succession.*

There were the excursion runs, especially in the later days of the passenger carrying boats. The charms of a trip on the river attracted many to longer or shorter outings on its waters in the months of pleasant weather, and there came to be concerns regularly engaged in the taking of excursion parties out from Pittsburgh. The usual form of this diversion was on a so-called excursion barge, which, most commonly, was an old steamboat, divested of its machinery and altered so that its lower and middle decks were cleared for dancing. The barge was pushed by a tow-boat. These trips were ordinarily of but a few hours duration, but on occasions more ambitious excursion parties would

* Successive boats of the Pittsburgh and Elizabeth line were the Fashion No. 2, Stephen Bayard, Colonel Bayard, James Rees, Elizabeth and the second Elizabeth.

charter a packet boat for a trip to the headwaters, living on the boat for the few days necessary for covering the trip in a leisurely way. And there was the "meet the packet" excursion, giving a pleasant day's outing on the water. In these the parties would board the boat leaving Pittsburgh at eight in the morning, transfer in mid-stream to the afternoon down boat and get back home in the evening.

The show-boat came to be a cherished institution on the river. Its season was the summer. It was a great, barn-like structure with its interior arranged and equipped as a theater, with seats, stage, curtain and scenery. Dramatic and vaudeville programs were rendered by a stock company carried on the boat. Its coming, announced by the strident tones of the calliope, would bring all the small boys and much more of the population to the river bank. And in the evenings of the stay there would be a flocking to this house of entertainment which came as a welcome visitor before every little town had its moving picture house.

Captain A. B. French was the pioneer in the floating theater business, with his *New Sensation*, but he and it soon had many imitators. His wife, Mrs. Callie French, was also a pioneer, in being the first woman to be granted a pilot and master license, for she commanded and steered the steamer which pushed the show-boat from port to port. When these craft were safely moored at the landing, the band, in resplendent uniform, would sally forth, and parade the principal streets with a blare and flourish. At the head, on his pony, rode the captain, his long beard reposing on his breast, but not concealing the yards of heavy gold chain encircling his neck and hanging low in front. And the column never failed to visit the local newspaper office, with a serenade and "comps" for the writing force and printers.

There were many readers of the newspapers, doubtless, who had interesting memories stirred when they saw the news dispatch from Mound City, Illinois, under date of December 29, 1930, which told of the end of the *New Sensation*. The account set forth that the old show-boat was sold for \$1500, by court order, to pay storage charges, and

the first of the year 1776, the British evacuated the city and fled to the north. The Continental Congress followed them and on September 17, 1776, the Battle of the Clouds was fought. The British were defeated and the Continental Army moved on to the north. The British evacuated the city again in 1777 and the Continental Army followed them to the north. The British were defeated again and the Continental Army moved on to the north. The British evacuated the city again in 1778 and the Continental Army followed them to the north. The British were defeated again and the Continental Army moved on to the north.

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the craft was to be broken up by its purchaser. The article continued:

It was pulled into the old navy yard here in 1927 for repairs, and was never taken out. Handbills tacked to the walls of the boat show a chorus of six girls, the last to dance on the boards of the Sensation's stage. The office safe, a small iron box, is rusty. When spring comes it will be "curtain" and "lights out" for French's New Sensation. Captain French, builder of the boat, has been dead for 25 years.

It was Billy Bryant's show-boat of a later period, annually tying up in the Monongahela for the winter, but covering much of the Mississippi Basin in its season's wanderings, around which was built Edna Ferber's novel and stage success, "Show-Boat."

The celebration which marked the centennial of the first steamboat in these waters was a three-day event, held at Pittsburgh, beginning October 30, 1911. It was participated in by President Taft and representatives of the later generations of the Fulton, Livingston and Roosevelt families. Papers and addresses appropriate to the occasion were contributed by historians in a series of gatherings, and the crowning feature was a great steamboat parade on the Monongahela, Allegheny and Ohio Rivers. A boat duplicating the original New Orleans had been built at Elizabeth and fitted with antique engine and other equipment at Pittsburgh. Over the prow of this ancient appearing craft Mrs. Alice Roosevelt Longworth crashed a great bottle of native wine, amid the cheers of 50,000 spectators and the shrieking chorus of half a hundred steamboat whistles. Then the quaint little boat took her place at the head of a line of forty-five gaily decorated steamers of the later age, and the procession moved, viewed by other great throngs all along its course. In the days following the second New Orleans, with an interested party on board, began her voyage down the rivers, duplicating the voyage of her prototype a century before, headed for the city for which they both were named, which was safely reached.

The coming of railroads marked the beginning of the end for the combined passenger and freight boats on the Monongahela. These made a brave fight for some years, but the last of them was gone from the river in the first quarter of the twentieth century. The last run of a side-

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wheel packet in this trade was that of the I. C. Woodward, which left Pittsburgh and tied up at Fairmont on Thanksgiving Day in 1912. Captain Enoch Dougherty was in command, with William S. Syphers as mate, Frank Williams and Robert Demain, pilots. In the years following spasmodic attempts were made to revive the traffic with various stern-wheel boats at different times, and the Leroy, the last such one, made its final run on November 24, 1920.

When Packets Raced

Eighty-five-year-old C. B. Copeland of Charleroi, is "Cy" to old-time friends all along the river, but, from his writings, known to hosts of newspaper readers in the valley as "Old Man River." He was employed for many years at old Lock No. 4, and has vivid memories of the old packet days. Two of these recall the time of hot rivalry between the two lines of boats:

The Chieftain and Bennett left the Pittsburgh wharf at the same time, 3:00 p. m. each day. Both had runners out to cop the up-river passengers. Dad Smith was clerk on one boat, Jerry Carmack on the other. They both spied a woman coming down the wharf, carrying a baby and a suitcase. Dad got the baby, Jerry the suitcase—and the woman. The poor mother never noted the mistake until both boats were under way, and a scene followed. Things were righted at Lock No. 1 when the baby was safely restored to its mother.

Coming down from Lock No. 5, (then Denbo) the Bennett and Chieftain, neck and neck, were in a race. The Bennett had on board a mule, consigned to some coal operator. To land the mule might lose the opportunity to reach Lock No. 4 first. The owner of the mule was on the wharf to receive his consignment. Uncle Abe Gaskell ran the Bennett close to the wharf, when George Poundstone, the mate, and several husky members of the crew pushed the mule overboard. It swam ashore and was captured by its owner.

Bell and Whistle

From the early days of the steamboat its big bell, on the forward end of the hurricane deck, was a feature. Its clang foretold the approach of the steamer and it was used for various signals in her operation.

The steam whistle was introduced in the early forties. Both of these appliances were made in Pittsburgh by

“Andy” Fulton, friend of all the boatmen and with a fame as wide as navigation on the western rivers. When the first boat with a whistle ascended the river its blasts brought terror to many. One old Negro, as nearly white as he could become, ran wildly about with his arms waving, teeth chattering and eyes bulging, while he cried:

“Jedgment Day am heah, an’ ol’ Gabr’el done blowed his horn!”

Navigating Under Difficulties

Language of some of the old-time rivermen was often picturesque and forceful, especially when under the stress of strong emotion. Steve Warman, master mechanic at the old Prideville iron works on the Cheat and a well known character along the stream, was one who had a robust vocabulary. At the time when the building of steamboats was very popular, Steve resolved that he would have one, and, being a fine workman, proceeded to build it. The boat was a typical stern-wheeler. It was safely launched in a natural pool of the river, but he had to wait for high water on which to take it out of the Cheat. He went on with the work, providing his vessel with its engines and other equipment, making it fully ready for navigation. When the rise in the river came, it was a real flood. For all of Steve’s mechanical ability, he was without experience as a steamboat pilot, an art in itself, but he resolved to try it. He soon lost control, and the boat sheered clear across the river in about a mile’s progress and going like mad, as it headed into a gut through Rude’s Island. Steve stood to the wheel until overhanging branches of trees began sweeping his crew off the boat and into the water, when he shouted:

“Look out for yourselves, men! I’ve lost all demand of ’er. She’s a-goin’ to Hell!”

The first of these is the fact that the
the United States is a free country
and that the people are free to
express their opinions and to
participate in the government.
The second is the fact that the
United States is a country of
opportunity and that the people
are free to pursue their own
happiness and to improve their
condition.

THE UNITED STATES

The United States is a country of
freedom and opportunity. It is a
country where the people are free
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THE UNITED STATES
OF AMERICA

CHAPTER XVII

Slackwater Improvement: Earliest Dams and Efforts For Better Ones

Like the activity of boating on the Monongahela, the improvement of the stream to afford the best facilities for that activity did not come all at once, but was a long-drawn-out process, both in its planning and actual building. Reference has been made earlier to the construction of rough wingwalls in the stream at riffles, whereby the water in large measure was confined to a narrow channel, for the better passage of boats. This seems to have been a voluntary work by those who operated boats in commerce of the earliest days of the activity. These works played an important part and were to be found at nearly all of the passages connecting the natural pools of the river for many miles above its mouth.

The next development consisted of dams, built partly or wholly across the river. The primary object of these, in most cases, was to provide power for operating mills, usually for the grinding of grain or sawing lumber. Such a dam would be so constructed as to divert much of the water to one side of the stream where the mill was located. There it passed down a chute, its rapid current turning an undershot wheel which supplied power to the mill. These dams for the different uses were constructed of log cribbing, filled with stones, and well answered their purposes as long as they were not carried away by very high water or a break-up of heavy ice, for these at times were such as no dam then built could resist.

Surveys made with a view to securing data in the first moves for slackwater improvement of the stream brought detailed reports, accompanied by maps, which showed about a dozen of these dams existing in the upper part of the river, where they seem to have been most common, doubtless because the narrower channel there made construction simpler. The first of these dams in ascending

THE GARDEN

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THE GARDEN
THE GARDEN

The garden is a place of peace and beauty, a place where the sun and moon and stars are all in harmony. It is a place where the flowers and the trees and the grass are all in harmony. It is a place where the birds and the bees and the butterflies are all in harmony. It is a place where the wind and the rain and the snow are all in harmony. It is a place where the light and the dark and the color are all in harmony. It is a place where the joy and the sorrow and the love and the hate are all in harmony. It is a place where the life and the death and the birth and the rebirth are all in harmony. It is a place where the heaven and the earth and the hell and the purgatory are all in harmony. It is a place where the angels and the devils and the saints and the sinners are all in harmony. It is a place where the gods and the goddesses and the demons and the spirits are all in harmony. It is a place where the universe and the cosmos and the galaxy and the universe are all in harmony. It is a place where the world and the world and the world are all in harmony. It is a place where the garden and the garden and the garden are all in harmony.

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the stream of which there is record was at the mouth of Mingo Creek, about thirty miles from the mouth of the river. There a dam was built entirely across, with a mill on each side of the stream, owned and operated by Benjamin Parkinson, who was a nephew of the man of the same name prominent in the Whisky Insurrection.

When the centennial of Monongahela's laying out was celebrated in 1892, A. R. Parkinson, a descendant of the man above referred to, made an address from which quotation has been made earlier in this work. In it was given much interesting information concerning these past developments at the place and neighborhood. This speech, with others brought out, was preserved in a souvenir booklet copies of which are still cherished in various homes in the vicinity and the libraries. It makes a valuable contribution to the subject in hand. The speaker's own recollection of family traditions was aided by the memory of William J. Alexander, aged banker then living, so it was possible to give a good word picture of the old works at Mingo Creek which will serve in general to describe all of such works along the river at the time to which reference was made. Mr. Alexander's memory supplied these interesting details:

The old river mill was still standing when I was a boy and went to mill, and I remember the thick, strong walls of the foundation that stood partly in the water, and the long undershot water-wheel, extending fifty feet or more out in the river. The wheel was three or four feet in diameter and at least thirty feet long, connected with the machinery by a stout wooden shaft, penetrating the outside wall. The dam was four or five feet high, over which the water poured against the breast of the wheel, passing under it. Out in mid stream was an opening in the dam on either side of which a cribbing extended up stream. Through this opening, called a chute, most of the water in the river flowed very swiftly, but deep enough for the boats then in use.

The mill was a great gathering place for the settlers, where they were often detained several days, awaiting their turns. During this time, if it were summer, they fished; if cold weather, they gathered around the great hearth in the mill basement, passing the time in exchanging news, recounting incidents or telling stories. In their hairbreadth escapes from Indians, wild animals or witches especially, the banshees were favorites.

As the mill dams were built to take advantage of a small fall or ripple, an improvement of the channel was the result, when most of the river was forced into the narrow chute. Wingwalls of boulders were thrown up at other places where there were no mills, and in a

short time after the river mills came, they had an improved channel from Pittsburgh to Fort Redstone, or Brownsville.

The first moves for a more permanent and systematic improvement of the stream, to aid navigation, all took account of these existing dams, and the plans contemplated their preservation and utilization, as far as possible, as parts of the system. The plans were not those of government, either state or national, with a view to operation by these, but contemplated operation by a state-chartered corporation. When finally there was a definite move by such a company, the State of Pennsylvania co-operated by taking a liberal block of the stock; for the improvement, as originally projected and long operated after it was set going, was distinctly a Pennsylvania institution.

The Federal Government, under constitutional provision, had the final determination of matters connected with navigable streams, but in practice was not giving much attention to such matters. It certainly was not concerning itself to any such extent as in the present, when its Department of War decides down to the last detail all questions which affect the navigation, and in many cases, as in that of the Monongahela, the Government owns and operates all of the improvements in the slackwater system. It jealously guards against any encroachment on the stream from its margins, and no bridge or other structure may be built in or over the stream except by definite permission. A bridge across a navigable stream may be built only by authority of a special act of Congress, and then must conform rigidly to specifications defining height and width of channel spans and other such details.

But the manifestation of this interest by the Federal Government came later than the period now being considered. When a definite move was made for systematic improvement of the river in aid of navigation, it was by the forming of a stock company which applied to the State Legislature for a charter of incorporation. It proposed, by construction of dams of designated heights at various points along the stream, to check the flow of the water and raise it to heights permitting navigation over intervening shoals. Locks were planned for the dams, at one or the other side of the river, to permit the passage of boats, the locks being equipped with devices for changing the height

of the water within their chambers to correspond with that on which the craft would pass in and out. This is the essential principle of all locks then, before and since, though great improvements have been made in construction and devices for operation.

Definite moves to this end came only after they had long been advocated by publications of the time, and more than one such was projected and given the needed legislative authority before there was an actual beginning of the work. So the getting of this work started involved years of effort on the part of men who were prompted by the double motive of providing a needed improvement and deriving revenue from it in the lockage tolls to be assessed on boats using the system. In these moves they were supported by numerous signed petitions to the Legislature of interested residents of the valley.

In 1817 an act was passed which authorized the Governor to incorporate a company for the improvement of the stream and the operation of the works thus established. At the same time a commission was appointed, consisting of prominent men in practically all the important towns along the river, to organize the company and receive subscriptions to its capital stock. Provision was made for utilizing existing mill dams and the construction of other dams to make the total number sixteen between the mouth of the river and the line separating Pennsylvania and Virginia, as it then was, the object being to provide a continuous navigable stage of water in all of the river in Pennsylvania. The height of the highest of these dams was less than five feet.

This movement proceeded to the point of getting the company organized and sufficient stock subscriptions to claim that subscribed by the State, but never reached the point of actual work of construction. In the years following efforts were made from time to time to revive the project of improvement of the river by a corporation to be formed. In the meantime legislation was enacted for winding up the affairs of the one which had functioned for a time. Thus the project dragged along, but sentiment in its favor slowly grew.

There were also in these years two careful surveys of the river made by experts chosen for the purpose, and their

reports had much to do with shaping of the improvements finally made, though the plans of neither were followed as to definite locations of dams and some other important particulars. But the two were in agreement on one matter, namely, the desirability of dams higher than those recommended by the commission which earlier examined and reported on the subject, with fewer dams and these farther apart.

The first of these reports was that submitted by Edward F. Gay, an engineer employed by the State of Pennsylvania and made to the Legislature in 1828. It was in pursuance of an act providing for examination of the Monongahela, Allegheny and Ohio Rivers, with a view to determining their adaptability for improvement by dams and locks, or the construction of canals along them. The report is preserved in Hazard's "Register of Pennsylvania," and this paragraph sets forth the scope of intent in relation to the Monongahela:

That examinations, levels and surveys be made along the Monongahela from the Virginia line to Pittsburgh, with a view of determining the most eligible mode of effecting a communication, either by canal or slackwater navigation. And that in contemplation of a slackwater navigation, to report, in addition to other proper and necessary matters, precise accounts of the number of dams and locks necessary to be erected, their respective dimensions and localities, the material of which they should be constructed, and the plan, manner and estimated expense of the same, separately. And further, that the plan shall be so arranged, if practicable, as to preserve from injury the mill works and water power now in use on said river.

Engineer Gay gave a detailed description of the stream in the various particulars called for in his instructions. His recommendation was unfavorable to the construction of a canal along the valley, but he did recommend improvement of the stream by dams and locks. He named eight eligible locations for dams of crib construction, to range in height from seven to twelve feet. His estimate of the cost of the entire improvement was \$306,784, if the lock walls were constructed of dressed stone, or \$265,534 if they were of crib construction.

The other survey and report mark the first evidence this writer has found of any serious interest by the Federal Government in the Monongahela and its improvement. The successful operation of the government-controlled National

Road to and beyond Brownsville for some years possibly had something to do with influencing this action. In 1832 a resolution introduced in Congress by Representative Andrew Stewart was adopted which set forth that "the President of the United States is hereby authorized to extend the improvement of steamboat navigation from Pittsburgh to the Cumberland Road at Brownsville, upon such plan as he may approve."

Dr. William Howard, civil engineer, was authorized to make a survey of the river, and his report was submitted the following year. This report is summarized in the "History of the Monongahela Navigation Company," attributed to Judge James Veech, a copy of which is preserved in the Carnegie Library of Pittsburgh. It succinctly covers the early moves for providing slackwater improvement of the Monongahela, so a paragraph from it, relating to the matters now under consideration is given here:

The earliest known suggestion of an improvement of the navigation of the Monongahela by locks and dams was in a report of a survey made for the State by E. F. Gay, civil engineer, in 1828. It was unheeded and nothing further was done until 1832, when the late Hon. Andrew Stewart, of Fayette, made an effort in the Congress of the United States to have it done by the National Government as an extension, under the act of 1824, of the improvement of the Ohio, to the National Road at Brownsville, which was made in 1833, by Dr. William Howard, U. S. Civil Engineer. His plan was locks and low dams—eight in number—of 4½ feet lift, except that No. 1 would be 6 feet, the object being to use them only when the river was low.

The three reports, with proposals for improving the river by dams and locks, afford some interesting subjects for consideration, comparing them and their progressive tending towards the plan that was finally adopted. It is now apparent that the first of the plans—that of the state commissioners—was wholly impracticable and that none of them would have given the results desired and finally attained. The commissioners recommended sixteen low dams for the entire river within the State, about 92 miles. Gay cut the number in half and would make the dams much higher. But while his eight were for the whole river within Pennsylvania, Howard would place the same number within the 56 miles between Brownsville and the mouth of the river. When the improvement was finally

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made, there were only four dams in this latter stretch of the river, with an average height somewhat higher than that contemplated in any of the plans.

Another interesting fact in connection with the plans of the two engineers is in observing how they were influenced, apparently, by the canal locks of the time. It seems to have been thought that a lift of more than six feet in a single lock was impracticable, and where dams considerably exceeded this height in the recommendation two locks were planned for surmounting them. A single lock at each dam, with lift much greater than any in these first recommendations, was the plan finally adopted, with but four of them between Pittsburgh and Brownsville, as shall appear in the next chapter.

Some Great Floods

All of the chief affluents of the Monongahela have their sources among the mountains, and that probably has something to do with the fact that the river has witnessed some great floods in its history. The water quickly reaches the stream from the steeps, on occasions of great rainfall or sudden thaw of snow. There have been greatly differing circumstances attending particular floods, as these affected different points along the river. The Monongahela and Allegheny head far apart, so occasions have been rare when a great volume of water came out of both simultaneously. But when such was the case, Pittsburgh and the Ohio valley experienced much higher water than did various points along the contributing streams.

The first great flood at the head of the Ohio of which there is record occurred in 1762, and this record has only recently become available locally. Discovery of this fact was made in the Western Pennsylvania Historical Survey, being conducted by the Historical Society of Western Pennsylvania in collaboration with the University of Pittsburgh. Franklin F. Holbrook, director of the Historical Society, gives the information that a description of this flood was found in a letter written by Colonel Henry Bouquet, stationed at Fort Pitt, to Sir Jeffrey Amherst, commander-in-chief of British forces in America. The original of the letter is in the British Museum. Said Mr. Holbrook:

"A photostat of it was loaned to us by the Library of Congress. Apparently the flood referred to is the first sizable flood recorded here since the beginning of the settlement." In the letter which Colonel Bouquet wrote January 12, 1762, he said:

On the 9th the river run ten feet over the banks, which had not happened at any flood since this place is built. All our casemattes with our provisions were under water, and all our precautions could not prevent its penetrating likewise in the powder magazine. The water came upon us through the drains, gate and sally ports, and boiled out of the ground in several parts of the area.

I cannot ascertain yet our loss of provisions, ammunition and stores. As we had just done salting, the meat was still in bulk, or in barrels without heads. We have got it all out of the water, and it must be salted over again. I have ordered up some salt left at Bedford. Unless we can get it soon, the meat will be lost. A distressing loss will be the powder. We could only get 13 barrels out.

Elsewhere in the letter Colonel Bouquet said the common depth of the Allegheny River at low water was around four to six feet, and that the perpendicular height on the 9th was between 39 and 41 feet. The river rose "34 or 35 feet, which is ten feet over the banks."

Old residents long ago used to tell of the flood of 1832, which then set the standard for high water in the Monongahela, but no accurate record of its height was retained, so exact comparisons could not be made with later freshets, nor can such be made with this earliest of the recorded floods the account of which has been so recently made available. The next high water which in the memories of those who saw both seemed to approximate the stage of 1832, came on April 6, 1852. Marks made then and long remaining, showed the height attained above zero of low water at a certain location on the river to be 33 feet and 11 inches. Subsequent stages in which 30 feet were exceeded at the same place as that above given will be noted.

It will be observed that heights attained in more recent years have gradually become greater. To account for this, some say that cutting of much timber about the headwaters has resulted in the water reaching the streams more rapidly, while others try to account for it by alleging that encroachments on the channel in lower stretches of the river have narrowed it, giving it less vent for rapidly discharging great volumes of water. In the same section

the first of these, the first half of the 19th century, is the period of the first great geological discovery, the discovery of the fossil remains of the extinct animals and plants of the earth's history, and the discovery of the laws of the earth's history.

The second half of the 19th century is the period of the second great geological discovery, the discovery of the laws of the earth's history, and the discovery of the laws of the earth's history. The third half of the 19th century is the period of the third great geological discovery, the discovery of the laws of the earth's history, and the discovery of the laws of the earth's history. The fourth half of the 19th century is the period of the fourth great geological discovery, the discovery of the laws of the earth's history, and the discovery of the laws of the earth's history.

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there has been much filling of low ground adjacent to the river by waste from mills, etc., further restricting the capacity. Perhaps all of these things have contributed in some measure to the result which is evidenced in the gradually mounting figures in the records of the floods. These are:

April 19, 1852, thirteen days after the last flood above noted, even 34 feet, or one inch higher than that earlier in the same month.

January 10, 1862, 33 feet, 11 inches.

August 3, 1875, 31 feet, 2 inches.

January 17, 1877, 32 feet, 11 inches. This was the most destructive flood in the history of the river, due to the heavy ice break-up accompanying it. Some further facts concerning this flood are given in Chapter XVI of this work.

July 18, 1888, 35 feet, 6 inches. Much damage and destruction of property resulted from this flood.

February 23, 1897, 37 feet, 1½ inches. This stood as the record high until

March 14, 1907, even 39 feet. This was the highest water in the Monongahela River above Pittsburgh, up to that time, of which there is record. It was the occasion of breaking of the winter ice in both this stream and the Allegheny, doing much damage thereby and putting much of downtown Pittsburgh under water. The stage recorded there was 36 feet, 8 inches. Cellars and ground floors in many blocks adjacent to both rivers for a mile or more up from their junction were flooded. Newspapers of the city tell of the big steamboat, Keystone State, being found with her nose in the mouth of Wood Street and various other boats rubbing the buildings facing Water Street, hundreds of feet from their usual moorings, while great ice cakes floated about the down-town streets.

The month of March in 1910 brought floods in the two rivers, with crests only a few days apart. This occasion did not bring stages in either of these rivers as high as those of a number of times earlier, but their coming so nearly together brought a stage in the Ohio which passed all records up to that time and did vast damage.

It remained for 1936 to bring the highest water ever recorded along the Monongahela. The peak of the rise

was attained on March 18th of that year when marks which were located near to those which formed the basis of heights given in preceding paragraphs showed 41 feet and 6 inches. There was a very high stage of water in the Allegheny at the same time and the result was the covering of much of down-town Pittsburgh by many feet of water. Vast damage was done there and at many points along the rivers.

The early days of 1937 brought very high water again though it did not attain such height along the Monongahela as various earlier rises. But floods in other tributaries at about the same time made their contributions, with the result that the Ohio had the highest water and most disastrous flood in its history.

One early flood in the Monongahela was long remembered by those who saw it and lived to compare it with later high water by one peculiar circumstance. It occurred in the autumn and the water inundated many fields along the upper Monongahela, carrying away vast quantities of farm products. For a time the surface of the water below was thickly covered with big yellow pumpkins, and for many years thereafter it was remembered and recalled as the "Pumpkin Flood."



CHAPTER XVIII

Slackwater Improvement: Building of Dams and Locks and Their Use Through the Years

Notwithstanding many delays and discouragements in the project of improving the Monongahela for navigation by the construction of dams and locks, sentiment in its favor persisted and efforts for its attainment continued. Beyond receiving the report of its survey of the stream in 1833, the Federal Government took no further action for many years. Proponents of the project centered their efforts on the Legislature of Pennsylvania. Meetings were held, petitions circulated and largely signed and thereby sentiment favorable to the project was strengthened. Then the appeal was again presented to the Assembly.

This move resulted in passage of an act which provided for the formation and chartering of a company with the necessary authority for making the project a reality. This organization proved to be that which finally brought to pass the construction and operation of the works that finally gave to the river its system of dams and locks, under corporate direction. Such was the situation in the late thirties of the last century. But there were yet to be years of delays and discouragements, changes of plans to meet conditions as they were found to exist and financial difficulties overcome before the dream of years became a reality.

In this enactment the Monongahela Navigation Company was born, and it continued to function for many years. At that stage it had become a popular project and its financing to the amount then considered sufficient was apparently not a matter of very great difficulty. The attitude of the State Government toward the project was distinctly friendly, as manifested a few weeks after incorporation of the Navigation Company, when a charter was granted to the United States Bank of Pennsylvania, at Philadelphia, a state-sponsored concern. One condition of the bank's charter required that it take stock to the amount of \$50,000

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in the navigation project, this to be increased as work on the improvements progressed.

A large body of commissioners, having representation all along the river within the state, was named in the act, to solicit stock and organize the company, which should operate under a president and board of managers. Provision was made also for extending the works into the State of Virginia, if the necessary authority should be granted by the Legislature of the same. It was provided that five dams be located between Pittsburgh and Brownsville and five more between there and the state line. The plan still had in it utilization of some of the old mill dams. Heights of these and the others in the plan were less than was later found the requisite minimum for the best results. Subsequent changes brought the plan on which the improvement was made, namely, four dams between Pittsburgh and Brownsville and, nearly a score of years later, three more to extend it to the state line.

The company was duly organized by the commission, and succeeded within a year in securing stock subscriptions sufficient to warrant beginning the work of construction. The State of Pennsylvania manifested its continued interest by subscribing, by special act of the Legislature, \$125,000 to the capital stock. Then followed a series of discouraging developments, along with an exhibition of plucky persistence on the part of the men who were actively engaged in promoting the enterprise. These things are set forth in detail in the published annual reports of the corporation and in Judge James Veech's book, "The Monongahela Navigation Company." Their highlights only can be touched here.

Efforts were centered on improvement of that portion of the river to give continuous navigation between Pittsburgh and Brownsville. Early decisions resulted not only in reducing the number of dams in that section from five to four, but changes in locations in some cases from those previously favored. The site for No. 1 continued at the Pittsburgh location originally chosen. No. 2 was located and finally built a short distance above the mouth of Turtle Creek, where grew up the once busy town of Port Perry, now hardly more than a memory. No. 3 was located a short distance below Watson's Run, two miles above the

boat landing at Elizabeth. No. 4 was placed at a point about two miles below Belle Vernon, at the place now connecting the two cities of Monessen and Charleroi which have since come into being.

Contracts were let in the latter part of 1938 for construction of the first two dams and their locks, and work on them was begun as soon as weather conditions would permit. The financial depression which set in during 1837 became more pronounced in the following year and made financial operations increasingly difficult. More than once work had to be suspended for lack of funds, but the autumn of 1841 saw completion of work on Nos. 1 and 2 to the extent that they could be operated. In the meantime contracts were let for 3 and 4, and their construction was also attended with much difficulty by reason of the financial stringency.

Two body blows received by the project at this time almost resulted in its complete undoing. The United States Bank of Pennsylvania failed and was forced to default on its subscription of \$50,000 and the State of Pennsylvania found itself unable to pay in cash its second subscription to the capital stock, in the amount of \$100,000, so issued bonds to cover the obligation. Due to the conditions existing these commanded but fifty percent of their face value, so the slackwater project suffered a loss of \$100,000. This amount, as computed at the time and set forth in the annual report, would have enabled completion of the first four dams and their locks. Then the finances of the State reached such an acute stage that it was resolved to dispose of its block of stock in the Monongahela Navigation Company.

These things so depressed the value of the stock that by many the project was accounted a failure and many stockholders were reluctant to meet the installments of their subscriptions as these matured. This condition brought litigation. But a few of the more active men who were engaged in the enterprise refused to admit its failure. Among them was General James K. Moorhead, who from being an important contractor engaged in the work became one of the leading stockholders. He and others succeeded in raising further funds and bought most of the State's stock at very low prices, on which in later years they real-

ized a handsome profit when it attained its fifty-dollar par and more.

That was in 1843, and was the darkest hour for the project, but the sale of the State's stock, regarded as a calamity at the time, probably was its salvation. A few men had practically their all in it, and their efforts for ultimate success were redoubled, with the result that all of the first four units of the enterprise were completed and put in use. Nos. 3 and 4 were opened and began to be operated in the autumn of 1844, and slackwater navigation between Pittsburgh and Brownsville became an accomplished fact, resulting in the rapid growth of traffic on the river, as noted in a previous chapter.

This traffic, considerable at the beginning, rapidly grew. It was due, in large part, to that which originated with the National Road at Brownsville and the Ohio River packets at Pittsburgh. But the growing communities along its course contributed their shares in conveyance of passengers and freight. On completion of these works the Pittsburgh and Brownsville Packet Company entered fully upon the career which long made it famous. Particulars concerning the slackwater improvements were set forth in the report of the operating company's engineer, issued in 1845, and published in the pamphlet of the year, along with the reports of other officials. Some parts of it follow:

The locks are massive structures of cut stone masonry set in hydraulic cement, with chambers measuring 190 feet in length and 50 feet in width. The points of the heavy miter gates are suspended from the tops of the walls and swing clear of the floor. The gates are opened and closed by means of capstans placed on tops of the walls.

The dams vary in length from 605 to 1000 feet, with a base of 65 feet in width, and a height of from 13 to 16 feet, according to the depth of water where they are located. They are constructed of timbers, laid in alternate courses, forming open cribs, 7 and 9 feet each, spiked at all crossings and filled with stone. * * *

The huge and apparently unwieldy gates, which are necessarily required to confine and discharge immense volumes of water contained in a lock of such unusual capacity as these of the Monongahela navigation, are worked by a mechanical contrivance of the simplest description, with an ease and celerity which enables the largest steamboats to pass through them in the incredibly short space of five minutes.

Doubtless these works were wonders for their day, and did look mammoth in comparison with the canal locks to

the first of these is the fact that the first of the three main groups of fossils, the *Trilobites*, are found in the same strata as the *Graptolites*. This is a very important fact, because it shows that the two groups of fossils were living at the same time. The second of the three main groups of fossils, the *Graptolites*, are found in the same strata as the *Trilobites*. This is a very important fact, because it shows that the two groups of fossils were living at the same time. The third of the three main groups of fossils, the *Graptolites*, are found in the same strata as the *Trilobites*. This is a very important fact, because it shows that the two groups of fossils were living at the same time.

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which people were accustomed, and they did set a fine mark for other systems of river improvement over the country, a number of which were undertaken in the years following. The worthy engineer felt justified in glorifying the works in the waters of the Monongahela. But how his eyes would bulge if he could see some of the government structures in the same river today—locks of capacity more than four times as great as the ones first built, and mighty dams each of which is one solid rock of concrete from shore to shore. The report of the same official in 1846 gives the entire cost of these first four dams and locks as \$488,407.98, which is but a fraction of the cost of single works of today!

Completion of the first four units left the Navigation Company deeply in debt, and there improvement rested for much of the next decade. The reports indicate that the circumstances attending the building of these first dams may have made them less substantial and secure than they otherwise would have been, for work was necessary from time to time for their strengthening, and in some cases for repair of breaks.

It was in the early fifties that movements were set on foot for continuing slackwater of the river to the state line, and the work proceeded slowly through a few years following. No. 5 was located for construction at Denbo, about three miles above Brownsville, No. 6 at Rice's Landing and No. 7 near the mouth of Jacobs Creek. The first two of these were completed in 1856, extending the slackwater to New Geneva, and nothing further was undertaken until long after the Civil War.

Then the Federal Government came into the picture as a builder. Its first such work was the construction of concrete Dam and Lock No. 9 at Hoard's Rocks, just within the State of West Virginia, in 1879. The Navigation Company followed with No. 7 and some years later the government built No. 8. This made slackwater continuous up the river as far as Morgantown, 100 miles, accomplished in 1892. Government acquisition of the entire system will be noted a little later.

Growing traffic on the river, and especially the wonderful development of coal shipping, made the locks in the lower portion wholly inadequate for its handling. Second

and a great part of the population were still
in the same state of ignorance and
superstition. The people were not yet
enlightened by the rays of science and
the spirit of inquiry. The people were not yet
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lock chambers were provided for the first four dams, the added lock being built alongside of the original one. This came for No. 1 in 1848 and for No. 2 in 1854. The second chamber for No. 3 did not come until 1884, and it was made larger than any one previously built, being 56 by 277 feet, inside measurement, as lock dimensions are always given. Two years later, at No. 4, a duplicate of it was opened in a second chamber there.

The old Monongahela Navigation Company passed from the picture with acquisition of its improvements and franchises by the United States Government in 1897. Through the long extended period of its operation many men contributed in an important way to its success and up-building, but only two of these can be mentioned here. Early in its career William Eichbaum became its president, and guided it through the troubled waters of the early forties. General James K. Moorhead became president in 1846, and continued in that position until his death in 1884. The comprehensive and lucid annual reports of these two men have contributed largely to facts assembled in preceding paragraphs of this chapter.

During General Moorhead's administration the company was firmly established in the powerful position held by it through the years. His interest in it from the time when his contracting firm handled construction work in the early and struggling years of the concern never flagged. His contracting experience was, doubtless, that which led him always to make his personal investigations and go to the bottom of matters when pursuing one of his frequent tours of inquiry and investigation about the works. Old lock hands still recall seeing the president of the company, in hip boots, wading about in the river on the occasions of such visits.

The company was General Moorhead's pet and its interests engaged his whole attention. He was given a large degree of freedom of action in its control, and his policies seldom were questioned by the board of managers. One principle always maintained in the many years of that regime was the discouragement of unnecessary Sunday traffic through the locks. Packets carrying the mails were passed through and on occasions of sudden rises in the river, giving promise of shipping water in the upper Ohio, the

the fact that the medical profession has been so long and so far from the truth, that it is now necessary to make a complete re-examination of the whole matter. The medical profession has been so long and so far from the truth, that it is now necessary to make a complete re-examination of the whole matter. The medical profession has been so long and so far from the truth, that it is now necessary to make a complete re-examination of the whole matter.

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emergency status was recognized, and boats with tows of coal were locked through. But at other times ordinary traffic could wait for secular days, and it was useless for any Sunday excursion boat to apply for passage of a lock. General Moorhead was succeeded as president of the company by his son, Max K. Moorhead.

Passenger boats were given preference over those towing coal or other freight, but with that exception it was first come first served at the locks. Often there was witnessed jockeying for position by a pilot in approaching a lock, and occasionally delays resulted from disputes over precedence. Pilots claiming the locking privilege have been known to get their steamers or tows in such position at the lock entrances that no other craft could pass in or out. If the claims of such were not allowed, delays of many hours might be caused, and the congestion resulting would require other hours to untangle. Such occasions were prolific in the picturesque profanity in which many steamboat men were highly proficient.

Taking over the slackwater system and its operation by the Federal Government, free of tolls, was long urged by the shipping interests and others who saw in this project further growth and development of industry in the valley. When the government began building dams and locks in the upper part of the valley it was a concession to this sentiment and virtual promise that eventually all the slackwater improvements of the river would be thus owned and operated. The Pittsburgh Coal Exchange in season and out of season besieged Congress in its demand for Government control, one of its chief arguments being that the shipment of coal from the Kanawha River in West Virginia, through government locks, free of toll, in competition with toll-burdened Monongahela coal, was grossly unjust. But government agencies move with proverbial slowness, and in the contending interests in Congress, with claims of various sections for demanded improvements, it required years of effort to bring success to the project.

Government ownership came in 1897, after extended negotiations and hearing reports of many viewers and representatives of the Navigation Company, the Government and the shipping interests. The company did not want to sell, but on demand of the Government that it put

a price on its holdings and franchises, named a figure in excess of \$4,000,000. An act of Congress authorized the Secretary of War to make purchase at a price to be agreed on by a commission appointed to view the works and other holdings of the company. In case it would not sell at the price so fixed, provision was made for acquiring the property and franchises by condemnation proceedings. Title was finally acquired by the Government through the latter course, the price paid being in excess of three and three-quarter million dollars.

But this result prevailed only after the Navigation Company had exhausted every legal means in efforts to defeat it. Every step was fought in the courts, and years were consumed in the litigation. The deliverance of the Supreme Court of the United States in affirming the right of the Government in the matter made history. Such was its breadth that this finding was quoted in an argument before the same high tribunal in recent procedure to establish the validity of government measures, under the administration of President Franklin D. Roosevelt. The principle involved was that the procedure was for the common good.

The Government, in its operation of this navigation for a period of more than a third of a century, has practically rebuilt all of the old works, added some important new ones and changed various locations. The navigation has been extended to Fairmont, West Virginia, covering the whole of the main river. There is uniformity of size in all of the upper locks, Nos. 10 to 15, inclusive, being 56 by 182 feet, with single chambers. Every lock and dam in the river is of solid concrete construction. In the readjustment of pools, No. 9, which was the first dam and lock built by the Government, was abandoned and entirely cleared out. The size of 56 by 360 feet was the standard adopted for Nos. 1 to 8, and double locks of those dimensions, with their new dams, were built for all except the two to be noted. New No. 2 was moved down stream for about one-half mile, to Braddock; No. 5 down about three miles, to Brownsville.

New No. 3, built in 1905, was moved down more than a mile, to the edge of Elizabeth. It had at the first the double locks of the standard size adopted for the first eight, but about twenty years later a radical departure was

made from this standard at that place. It was decided to enlarge one of the existing lock chambers, to make it double the size of the largest locks then in the river. Transportation of coal had come to be much the greatest item of traffic in the business of the river, which had been largely standardized, with a steamer towing six of the great modern steel barges, loaded on the down trip and the same number empty on the trip up stream. In the passage of such a fleet through a lock it had to be broken, the four foremost barges going into one chamber and the steamboat, with the two remaining barges, into the chamber next available for passage in its direction. The inner chamber at No. 3 was enlarged to 56 by 720 feet. This was just twice as long as any other lock chamber in the river, and was to permit the locking through of a steamer and its unbroken tow in one operation. That has been done at this lock ever since this improvement was completed, about the beginning of 1926.

No. 4 was the last of the units along the river to be rebuilt. It was moved one-half mile up the stream, opposite Charleroi, and completed in 1932. Lock dimensions there duplicated those at No. 3—one chamber 56 by 360 feet and one 56 by 720. This may be expected to be the standard for any future replacements in the lower part of the river.

The locks, once laboriously operated by hand-power, now have their operations controlled by compressed air, the water-power of the dams generating electrical energy for the compression. The ponderous gates are swung and the valves for controlling height of water in the chambers operated with an expedition and ease little short of marvelous.*

* The first improvement on the old hand-power operation of the locks was when, in the latter years of the last century, under the administration of the Monongahela Navigation Company, Captain George W. Lutes, superintendent of old No. 3, built a water-wheel, run by the swift current of the water passing over the dam. It was before the time of electrically-driven machinery, and he made a direct application of the water-power to a shaft extending along the outer wall of the lock, and from this geared connections to the lock gates. Though crude, it proved a great labor saver and did the work with a fair degree of success. W. D. Fairchilds, Assistant United States Engineer, made the first application of electrical energy, generated by water-power of the dam, to the operation of locks, at Nos. 7 and 8, in 1924.

There Were Objectors

Available records of the efforts of years which finally resulted in slackwater improvement of the Monongahela do not tell much of objectors to the project. But there were these, just as there have been those to oppose and often to ridicule anything which aims to overturn the old way of doing things and providing something better in its place. And these objections added one more to the many obstacles the project had to surmount before it was finally operating successfully. This opposition at one stage of the long fight for locks and dams took the form of remonstrances to the Legislature against granting measures asked by those promoting the project.

Such a paper came to light among some old documents in the year 1888, and was published in the "Elizabeth Herald" in its issue of January 13th of that year, as a curious reminder of doings in the earlier days. The manner of its wording in the second paragraph hints at a Pittsburgh origin for it. It is reproduced here:

The subscribers, residing on the Monongahela and Youghiogheny Rivers, with others interested in the premises, beg leave to represent: That having always considered the Act of 1782, making the Monongahela and Youghiogheny public highways a permanent guarantee, they had no fear that a charter which they understood was granted to a company, giving them the power of making dams 4½ feet high, would certainly reserve a free passage for taking their produce to market, but now they learn that the dams are to be 8 feet high and all the waters of these rivers put at the mercy and disposal of the company, without reserve, under the plausible appellation of Navigation Company, but in the opinion of the subscribers, Water Power company would be more appropriate, as it is believed, were the dams erected, owing to the nature of the soil, they would soon fill with drift and mud, and the navigation be ruined instead of improved.

A number of your petitioners have been raised on these rivers and take produce of their farms to Pittsburgh by water, some in keelboats, some in flats and many in skiffs, with little interruption of the former, and we may say none for the latter, and in this way we think three-fourths of all the goods to and from Pittsburgh are transported. By these skiffs our market is supplied with vegetables, oats, flour, &c. In these flats our manufacturers and city are supplied with three-fourths of their coal, and we may add if dams are made, the immense and growing coal trade down the river in arks will be subjected to heavy lockage, say one cent per bushel, and for what? Merely to aid a chartered monopoly. For, as it is, they can

ORIGINAL ARTICLES

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always come down to Pittsburgh when there is water to go down the river, and consequently the owners of coal lands on the Monongahela must either pay lockage, or purchasers will prefer getting their coal elsewhere.

As the Monongahela is naturally a muddy stream and little current, it is much to be apprehended the health of the inhabitants will be impaired as well as much valuable bottom land destroyed. It is well known that during the season in which business of any consequence is to be done, the steamboats find it difficult to run to Brownsville, and in order to complete the monopoly, it is reasonable to presume that the Company will have their own boats. It is supposed by some that the funds of the company, including the U. S. B.,* will be exhausted when the two dams are completed. Should this be true, no public utility can be pretended, but to many of your petitioners the injury will be incalculable (a commencement being made a mile above Pittsburgh.)**

We therefore pray your honorable bodies that the charter be repealed, in which numbers of stockholders would forfeit all they have paid in and join us. Should this be thought an encroachment on chartered rights, we pray that the supplement of 1839, increasing the dams to 8 feet, be repealed and a right of way secured to all who take their produce to market in their own boats, flats or skiffs, without impediment or charge. And your petitioners will ever pray.

Celebration of Free Navigation

Taking over of the slackwater improvements of the Monongahela by the United States Government and freeing these of tolls was celebrated by a demonstration witnessed by crowds estimated to run much in excess of one hundred thousand. It was likewise pronounced the greatest and most colorful river pageant ever seen on the western waters up to that time. It was the result of arrangements carefully made by committees of the Pittsburgh Chamber of Commerce and the Pittsburgh Coal Exchange, and its date was July 16, 1897.

The principal event of the occasion was a steamboat parade from the Monongahela wharf in Pittsburgh to Davis Island Dam in the Ohio River and back. Throngs of spec-

* This reference is evidently to the United States Bank, whose charter requirement to subscribe to the stock of the Navigation Company and subsequent failure are related in the foregoing chapter.

** Dam and Lock No. 1, when built, were located at McClurg's Bar, two miles above the mouth of the river and one mile above the Monongahela Bridge (Smithfield Street). This was the only location for a dam on which there was agreement in all of the several schemes of improvement recommended by those appointed to make surveys and reports for that purpose.

tators were lined along both sides of the rivers, over the whole course of the parade, and on the bridges overlooking the streams. About half a hundred steamers were in the harbor, and their whistling made a great din as the procession formed. More than half of the boats, gaily decorated with flags and bunting, took part in the parade, one or more of each for various concerns engaged in coal shipping at the time, besides some passenger packets, carrying officials, speakers and distinguished guests. The towboats carried their throngs also.

Government Supervision

Control of slackwater and other improvements along the rivers is vested by law in the War Department, and is exercised by the Chief of Engineers of the United States Army. For rivers of the Pittsburgh district this has local direction through a resident United States Engineer, with office at Pittsburgh, properly staffed. The fine record made in four decades of Government control, under efficient direction by various resident engineers, would in itself make material for a considerable volume, but cannot be gone into here. The present directing head of these operations is Lieutenant-Colonel W. E. R. Covell. Each lock has its own supervising head, known as lockmaster, and staff of other officials and hands, all in Federal employ.

The Government has its own fleet of steamers—craneboats for lock repair, snagboats and dredgeboats for keeping the channels clear, signal light supply boats, etc. An extensive yard for the Monongahela is maintained at North Charleroi (old Lock No. 4), where repair of government craft and other property is attended to, and a vast amount of material and fixtures of many kinds is stored and available for quick use in upkeep and repairs. Locations of all the Monongahela River locks and addresses of those principally engaged in their operation follow:

Lock No. 1, Pittsburgh, Pa.: Ike C. Bell, superintendent; Michael O'Hare, lockmaster; Frank C. Herrlein, chief engineman.

Lock No. 2, Braddock, Pa.: David C. Longsdon, lockmaster; William I. Gates, chief engineman.

Lock No. 3, Elizabeth, Pa.: William S. Syphers, lockmaster; J. Alfred Price, chief engineman.

Lock No. 4, Charleroi, Pa.: Anderson A. Caseber, lockmaster; Robert Hill, chief engineman.

Lock No. 5, Brownsville, Pa.: Charles W. Kerbler, lockmaster; Frank J. Marker, chief engineman.

Lock No. 6, Rice's Landing, Pa.: Claude R. Hains, lockmaster; Delbert W. Williams, chief engineman.

Lock No. 7, Greensboro, Pa.: John D. Sedgwick, lockmaster; Elmer D. Beckham, chief engineman.

Lock No. 8, Point Marion, Pa.: Charles F. Boyle, lockmaster; Roy C. Martin, chief engineman.

Lock No. 10, Morgantown, W. Va.: Alva C. Hoke, lockmaster.

Lock No. 11, Morgantown, W. Va.: Walter C. Floyd, lockmaster.

Lock No. 12, Little Falls, W. Va.: David Lane and John Anderson, lockmen.

Lock No. 13, Little Falls, W. Va.: William G. Shaffer, lockmaster.

Lock No. 14, Morgantown, W. Va., R. F. D.: Jesse E. Shaffer, lockmaster.

Lock No. 15, Hoult, W. Va.: Silas Sayre, lockmaster.



CHAPTER XIX

Coal: Early Movements and Mining Methods— Old Coalboating Days

Industrial supremacy of what has come to be known as the Pittsburgh District—largely the Monongahela Country of the early days—was and is based on a few factors. Outstanding in these are transportation facilities and mineral wealth. Among the various minerals of the region coal has first place. Very early in occupancy of the section by white people the existence of bituminous coal of excellent quality became known. The principal coal seam that is readily accessible, now and for many years past known as the Pittsburgh vein, was early revealed by its outcropping.

There seems to be general agreement that this embedded treasure was earliest worked on the hill across the Monongahela from the present down-town Pittsburgh. This gave it the name of Coal Hill, long called thus, though in later years it has been more popularly known as Mount Washington. There are records establishing the fact that very soon after the building of Fort Pitt coal was taken from there and used for fuel at the fort, and that it continued to be mined and used from the same place for many years following. It was soon found that this same coal seam existed under all the high ground of the region, and especially was the mineral thus rendered accessible along the hills bordering the Monongahela for many miles above its mouth.

Accounts of a number of early writers agree that the first operation of a mine commercially was in that same Coal Hill and it was likewise early in the existence of Fort Pitt. After being brought to the surface the coal was tumbled down the steep hillside and loaded into boats for distribution. Thus had its inception the first industrial activity, after the building of houses and boats, at Pittsburgh, destined to become an industrial world leader. It was at the same time the beginning of an industry which

would grow until its normal output, in the district within thirty miles around that spot would be fifty million tons annually.

Probably the earliest discoverer of coal in the region who left record of his find was Colonel James Burd. It was when he and the force under him, in 1759, were opening a road from that of Washington and Braddock to a connection with the Monongahela at the present Brownsville. In his diary Burd mentions a little stream which he calls "Coal Run," from "being entirely paved with fine stone coal."

That knowledge of the existence of coal over a considerable part of the region existed not many years afterwards is shown by an entry in the diary of George Washington when he was on one of his visits. It was in 1770, and he was staying for a time at the home of his friend and agent, Colonel William Crawford, on the Youghiogheny, near the present Connellsville. On October 4th he made this entry: "At Col. Crawford's all day. We went to see a coal mine, not far from his house, on the bank of the river. The coal seemed to be of the very best kind, burning freely, and abundance of it." The future president, a little later, on the same trip, visited Pittsburgh, and doubtless saw more of the coal of the "very best kind."

The mine in Coal Hill was soon followed by others, established at various points, though for many years the methods of mining and handling the product were primitive. The mine was an opening in the face of the hill, and it penetrated as a tunnel, following the seam, which, in the main, was near to level in its course. Estwick Evans, quotation from whose "Pedestrious Tour" has been made earlier, saw these mining operations in 1818 and thus referred to them:

[The hills] on the west of the Monongahela constitute a horizontal strata six inches [feet?] thick and apparently unlimited in its direction through the mountain. This coal is superior to that of England; it is heavier and contains a greater quantity of the bituminous quality. (Page 144.)

Another traveler passed that way a third of a century before the one just quoted. He was Dr. Johann David Schoepf, and his work, "Travels in the Confederation in 1783-1784," was published originally in German. Two translations of it have been found. The one quoted below

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was published in Philadelphia in 1911. It thus describes the coal in the Pittsburgh hill and philosophizes concerning its origin:

The coal bed, midway of the hill or mountain, is so much the more noteworthy because elsewhere coals are dug for at a depth, and is proof of what great changes have taken place in the surface of this region. The appearance proves of itself that America must be older than it should seem to be by the arbitrary assumptions of more than one illustrious man; for years must pass before so wide a stratum of coal is found, (according to the general opinion from plant mould, accumulated and changed), and this again covered with other mineral species; and how many more years would still be requisite for a stream to sink its channel below this coal stratum 60-80 feet deeper?

The singularity of this coal bed is an item of great convenience to the inhabitants. The coals dug out are merely poured into a trench furrowed in the steep wall of the mountain, and thence rolled down to the edge of the river, where they are immediately taken in by the boats lying ready. The vein of these coals is 10-12-18 feet wide, and extends through the length of the mountain. The coals are clean, light and glistening, not so glassy as those of Wyoming but more combustible and without any disagreeable smell.

A part of the fuel for the garrison having been taken from this mountain, the vein has been worked a considerable distance. * * * Moreover the coals are the property of the landowners, who, for the trifling payment of a penny for the bushel, allow anyone to fetch them away. (Pages 252, 253.)

Some resident apparently perceived the opportunity for advertising the local resources and caused the writer to overstate the thickness of the coal vein grossly. Nowhere is the Pittsburgh seam nearly as thick as here stated, even in the writer's minimum of 10 feet.

In the early coal mining operations digging was done by hand, with the aid of picks, and the coal was hauled to the exit of the mine in small wagons by the miners. Later large dogs came to be used by many to aid in this work. In some cases the coal was stored at the foot of the hill for neighborhood supply. In the cases above noted it went into boats, evidently to be poled across the river. But as the industry moved up the stream, boats were loaded in like manner for transporting elsewhere.

Some of the earliest Pittsburgh manufacturing industries were factories grouped along the river-front at the base of Coal Hill, the fuel being run down the hillside and into these works. As other industrial concerns were established in and about the city, the demand for coal increased

and it was brought from outlying districts. The Monongahela River offered the natural and easy way for handling this commodity, and within a few years many boatloads were being delivered from mines along that stream. Various kinds of vessels were used in this traffic, but the most common one was the open flat, which was poled along the river, after the manner of handling other craft, as earlier described.

For some years Pittsburgh offered a ready market for all the coal produced in the valley, in excess of local needs at the places of production. But in time information of the excellence of this product reached places farther down the rivers, and inquiries concerning it prompted some trial shipments down the Ohio in flatboats, consigned to various ports.

The first such shipments made down the Mississippi, so far as accessible records reveal, were in the carrying of coal as ballast by ships built at Pittsburgh and vicinity, about the beginning of the nineteenth century. But it was not very long thereafter that the product was going in flats from the Monongahela for points on the Father of Waters.

Craft in which coal was carried on the rivers in the earliest years of these shipments were, in the main, fashioned after the general style of the flatboats heretofore described, though of stronger construction, because of the heavier loads they were called to carry. They were also sided up somewhat higher, and, as they sank lower in the water, could be moved only in times of water stage higher than usual. So the spring and fall were the times when most coal was shipped, both on the Monongahela and the lower rivers, with an added peril on that account. This trade had become well established some years before the slackwater dams were built in the lower Monongahela, and the product of various mines along that stream was being shipped regularly to Pittsburgh and various ports below.

The old coalboatmen were a hardy lot, and the life was one of daring and danger, but had its attractive features which kept men at it year after year. The period of its activity was among the most picturesque and romantic in the long and checkered history of river activities. Many substantial men engaged in it, especially of the captains and pilots, but the crews were largely a turbulent lot of

fellows, out for any adventure which presented itself. Many were young, and the trip "down the river" was appealing to the average boy with youth's thirst for the adventurous.

With these the whole voyage was a prolonged frolic. When the port of delivery was safely reached, the members of the crew were paid off and, in the earlier years of the activity, usually walked home. If New Orleans was the destination, they sometimes worked passage on a ship to one of the Atlantic ports and made their way home from there.

The vessels engaged in this traffic grew with the business, and from those of modest size at the outset, they came to be mammoth containers, but were ever of a fragile construction for the great loads they carried. This was due to these facts: They were, like the flatboats of the emigrants, one-way craft, going down the rivers with their loads, but never returning. Being built for but one trip, they were inexpensively constructed. Then they sank deeply in the water, the pressure of which on their sides tended to hold them in shape and for safely carrying their loads as long as they did not collide with something harder and more firmly fixed. Such a collision often meant a crash, loss of the craft and its cargo and peril for the navigators.

Early in this activity the boats for this trade were built up the Allegheny River, and especially on one of its important affluents. For this reason they came to be known as French Creeks. This name persisted in the later years of movement of coal by steamboats, but was then applied specifically to the small sized ones, the full sized craft of that age being known under the general designation of coalboats. In the later years only the bottoms were built along the Allegheny, the siding up, calking and other finishing work being done at yards along the Monongahela. The bottoms were staunchly constructed of stout timber and planks, with substantial gunwales of squared timbers into which the stanchions for the sides and ends were morticed. In a series of articles published in 1887 in the "Elizabeth Herald," Dr. John E. Shaffer, then advanced in years, wrote of coalboats and their navigation, as remembered by him:

The bottoms varied in size. Usually they were about twenty feet wide by one hundred and twenty long, and when loaded drew about five feet of water.* The sides of these boats, as well as the ends, were composed of coalboat siding of pine, about one and one-half inches in thickness, and of a width and length corresponding with the size of the timber from which the siding was manufactured. The planks were fastened to the upright stanchions by means of wooden pins made especially for that purpose. When the siding up was completed the calkers finished the outside by filling the seams with a couple of ropes of oakum which was firmly driven, and when completed made a very close boat. * * *

There were two boxes constructed on the inner part of each side of every boat, which were to be used as wells, so that in case of the accumulation of water, by any defect of calking or from injury to the boat it could be relieved by pumping. * * * There were check-posts, one at each end of the boat. They were logs, set upright, securely fastened to the bottom, extending above the height of the sides. They were held in place by strong braces extending out in every direction, and the coal packed around aided in holding the posts rigid. These were for the tying up of the boats when landed, immense cables being attached.

A cabin, built above the load, completed the structure. This was the storehouse, dining and bunk room. The boats were sent out by twos, lashed together, side by side. A crew for a pair of boats consisted of from eight to twelve men, besides the captain, his relief pilot and the cook. On reaching Pittsburgh, the pair of boats were provisioned and otherwise outfitted. The account already quoted gives these additional particulars:

Barring the ordinary dangers of such craft, the journey was likely to be accomplished without special incident, but in case of unfavorable weather, the work required of the crew was simply herculean. Landing at the destination, the crew were paid off and dismissed, their immense coils of line, cooking utensils, chests, skiffs and other things being shipped by steamers to Pittsburgh, the crew returning on the same boat as deck passengers.

Coalboats of that period in their capacity were all reckoned in bushels of coal, and ranged from 6,000 to 20,000 bushels to the pair of boats, these figures representing approximately from 225 to 750 tons of coal.

There were real perils in the path of the boats loaded with coal, on their way to the markets down the rivers. It

* The standard size of the coalboat of the later steam towboat age was 24 feet wide, 160 feet long and 6 feet deep. This meant a carrying capacity of nearly 1000 tons of coal to the boat.

required careful handling to get them safely through the locks, after these were built in the Monongahela, and to steer them safely between piers of the bridges. Then there were the dangers, always present, which threatened craft of all kinds, and especially these heavy and unwieldy boats in the swift water of the high river necessary to float them. There were the rocks, snags, islands and the bars which shifted from time to time in the Ohio and Mississippi. It was the custom of many pilots to make voyages down these streams in skiffs when the water was low, in midsummer, making careful note of the channels and currents, and any changes.

Storms were potential perils to be reckoned with. Strong winds could make steering difficult, and sometimes disastrous collisions resulted from this cause. And the same element could send waves rolling over the edges of the deeply sunken coalboats until they were engulfed and sank.

At the time the first dams were being built in the Monongahela the production of coal along it and shipment down the Ohio were going forward with great strides. Early records of operations at the locks, as shown in the published annual reports, tell of the rapid growth of this activity, and old coalboatmen who lived in the later years remembered and told of the scenes of animation on the river when a swell in its water brought conditions favorable to such movement. Many new works were opened in the Monongahela Valley in that period, and their products went to swell the total of the coal thus moved. It was likewise a period of considerable and substantial development in the valleys of the Ohio and Mississippi, calling for constantly growing demand for the fuel.

The Civil War period witnessed a further vast increase in the coal trade of the Monongahela Valley, and this growth continued for many years following, until it attained prodigious proportions, as will be set forth in some measure in the chapter to follow this one. During the war the product was run, often at great risk and with heavy losses from time to time, by action of the forces hostile to the Federal Government. Sometimes such consignments were captured by the Confederate forces, by whom they were eagerly sought, but if that could not be done, the

effort was to destroy them. But the profits were enormous for that which successfully reached market. Many who became wealthy in the later years of the business made their first substantial accumulation of means then. At that period steamboats, which had been employed occasionally before in the towing of coal, came into general use, and the old method of floating the loaded boats in pairs down the rivers was soon abandoned.

Got the Veal

Dr. Shaffer's recollections of the old coalboating days, from which quotation has already been made, told the following:

Ordinarily the crews were a jolly lot of men, and would not be without amusement on their trips, when wind and weather permitted. The dwellers along the shores of the Ohio were not unmindful of the pranks these parties were accustomed to perform. Therefore when a coalboat freshet came in the river the dwellers along the shores put a special guard on their chicken coops, corn fields, melon and potato patches, and even their cow stables required additional care and protection. Nothing of the kind was exempt from the depredations of the crews on the trip down stream.

All sorts of schemes were resorted to to deceive parties who would follow the boats and come on board in search of lost property. It is related that a certain crew stole a calf. They butchered it aboard the boat, but had not gotten through with the labor when they saw the rightful owner in hot pursuit. Escape was impossible and detection and exposure were certain unless speedy means were devised to deceive the pursuers. An Irishman's wit does not desert him in emergencies. He quickly covered the dead and partly dressed calf with a bed comfort and added a pair of boots to the hind legs, with a hat near by. Then hailing the pursuers who were about to board the boat, he told them he was glad to see them, and, pointing to the remains, said that a member of the crew had died of small-pox, and would they not come on board and aid in taking the poor fellow's body ashore to some place they would know of for its burial? The pursuers backed off without coming on board, and the crew, without shedding any tears for the departed one, proceeded to enjoy their veal.

CHAPTER XX

Coal: The Towboat Era of Vast Expansion in Production and Shipping—Coke—Other Mineral Products

Towing of vessels has a different significance on the rivers between the Appalachian and Rocky Mountain systems than that given the word in the harbors of the sea-coast and the Great Lakes; different, in fact, from the generally accepted use of the term in its world-wide application. This generally accepted use of the word implies the dragging of vessels by extraneous force, and this is justified by its long application thus to the pulling of canal-boats by horses, proceeding on the towpath ahead of the vessel that is being dragged by aid of a rope. And similar is the action of the tugboat which draws other vessels about in the harbors of the coast and even on long voyages on the lakes.

But the towboat of the western rivers is a pusher instead of a puller. It is a staunch vessel with a single paddle-wheel at the stern, propelled by the united action of two powerful engines. Its "tow" is a fleet of barges or other containers, lashed together and to the front portion of the steamer. The tow is moved by being pushed by the steamer, and in its handling calls for more of skill than might be thought necessary until account is taken of the bends and currents, channels and shoals, and the obstructions such as islands, bridge piers and other impediments in the inland rivers.

Skillful piloting is required in moving the tow, whether it be into and out of the locks, with avoidance of the suction or swirl to the dam; the running of channel spans under the bridges; the passing of other like boats with their tows, and at the same time, possibly, the avoidance of fleets along the shoreline. The pilot must have accurate knowledge of his river, with its channels and currents at every point, hidden from view but existing and potent nevertheless. The rounding of short curves, with a long and pon-

derous tow ahead, calls for knowledge, skill, dexterity and a fine judgment.

The pilot must know just when to throw his rudder this way or that, or to hold it steadily. In a large way also control is maintained by the paddle-wheel, the operation of which he directs by bell signals communicated to the engine room. Sometimes it must be worked ahead, now with full force and again slowly. The next minute it may be necessary to reverse its action and then stop it while the great body swings from the impetus already given it or influenced by the local current, the rudder performing its function meanwhile. The problems of the river pilot, especially when his boat convoys a great and heavily laden fleet, is very different from that of the one who operates on a great body of open water.

Various claims have been made as to the first employment of steamboats for moving coal in other vessels. A number of persons and boats have been named as the pioneers in this activity. But the accounts seem to agree that it had its beginning about the middle of the thirties of the last century. For some years it was confined to the Monongahela, where little steamers began each to take a few small flats loaded with the fuel from the mines to Pittsburgh. It was nearly a dozen years after the first such shipment that a steamer ventured down the more perilous path of the Ohio with a tow of coal. This little shipment was the precursor of a coal towing trade which grew in later time until it attained to a total of nearly six hundred million bushels in a single year.

Other shipments down the Ohio were made from time to time by steamer, but the innovation gained headway slowly. The disposition was to entrust the loaded coal-boats in pairs to be manned and steered direct by crews of men, rather than through the agency of steamboats, and the old system continued in considerable measure until the middle sixties, when it gave way wholly to the towboat.

Without entering into technicalities or attempting a detailed description of the coal field being considered, some of the leading facts in connection with it are timely here. In 1927 the "Pittsburgh Post-Gazette" published a series of articles, dealing with the resources and industries of the district surrounding that city. Its sources of authority

were the local Chamber of Commerce, the Mellon Institute of Industrial Research (a department of the University of Pittsburgh), eminent engineers and other specialists in various fields of knowledge and practice, aiming at accuracy in all matters set forth. Concerning coal the report said:

The industrial district, thirty miles around Pittsburgh, is underlaid throughout with bituminous coal, and is the most important coal area in the United States in the variety, quality and extent of deposits. Bituminous coal of practically every grade is found in the Pittsburgh District. The Pittsburgh coal seam is the most volatile of all these grades, ranging from 33 to 41 percent in volatile combustion matter, and is universally known for its uses. About half of the coal mined in Pennsylvania is taken from this seam, and this amount approximates one-sixth of the coal mined in the United States.

The important veins of coal occurring in the Pittsburgh District are the Lower, Twin and Upper Freeports; Lower, Middle and Upper Kittannings; Pittsburgh and Pittsburgh Big Vein; Sewickley and Piedmont. These varieties of coal are used for making coke (largely used in steel production), in cement burning, for domestic purposes, for making illuminating gas, for steam purposes, for making producer gas and for tile pottery burning.

It may be noted in passing that some of the great veins of coal lie far beneath the surface of the region, where they are practically untouched, but will doubtless serve future generations, when they will be obtained by shafting, or perhaps by employing forces and methods now unknown. The vein that has been worked through all the years since it was first opened in Coal Hill is the one known as the Pittsburgh Seam. That is the one, opening out along the hills bordering the Monongahela, the shipment of whose product is being considered in this work.

The coal business continued to develop and grow until in the latter half of the last century one could never be out of sight of the works for the production, handling and shipping of the product, if he made the journey by day along the river between Pittsburgh and Brownsville. Before the end of the century, along that stretch of about 55 miles from Lock No. 1, an average of well over one mine to each mile of the distance on each side of the river were in operation.

The Pittsburgh Seam of coal is not on a dead level, but gradually dips and rises in the synclinals and anticlinals

the first of these is the fact that the American Medical Association is the only organization in the world which has a representative body of the medical profession in every country. This is a very important fact, for it means that the American Medical Association is in a position to represent the medical profession in every country, and to act in the best interests of the medical profession in every country.

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in the geological formation of the region. At Brownsville it is not a great many feet above the river and about four miles south of Elizabeth its dip reaches a low in altitude which permitted the operation of tipples on the level with the mine's mouth. At other points it is high in the hills, with regular graduations of altitude between these extremes.

The typical coal producing plant had its mine opening in the face of the river hill. The mule had succeeded the man and his dog in furnishing the motive power for bringing the coal, when mined, to the entrance of the pit. The main tunnel of the mine was laid with narrow-gauge railroad tracks, branching into the various "entries," and these into the several "rooms" in which the miners worked, individually or oftener in pairs. From the pit mouth to the foot of the hill a continuation of the mine railway went in a double-track incline, terminating on the tipple, a level structure extending out over the bank of the river like the beginning of a bridge. There the car was tipped and its contents went into the inclined chute, ribbed to carry the larger lumps while the finer coal dropped through. This in turn was screened into nut-coal and dust, each finally reaching its waiting vessel in the river, under the tipple. The check-house at the pit mouth held a large drum around which passed a wire rope, to one end of which was attached the loaded cars sent down the hill and the other end drew up the empty ones. The whole process was controlled by brakes on the drum, and no other power was needed than the pull of the descending loaded cars.

The earliest process of mining was all by hand digging, and it was laborious work. "Bearing in" was cutting under the coal across the width of the room at the floor level. Then there was shearing down along the two sides, all done with a pick in the hands of a sturdy man. The block of coal thus outlined was thrown down by wedges of iron driven in at the roof level or by explosion blasts. With the later years have come such improvements as coal cutting machines, driven by electrical power, with the mule largely supplanted by haulage systems operated from a power plant at the mouth of the pit.

The work has always had its perils, but it seemed in the earlier time there were more fatalities, in propor-

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The work has always had its perils, but it seemed that in times past were more fatalities, in propor-

tion to the number employed, than the present witnesses, due, doubtless, to better measures of safety now than then. Miners being caught under the falling coal or struck and crushed by masses of slate falling from the roof formed the commonest manner of death or injury. Wooden posts were used for supporting the roof. These might be hastily or improperly placed, or neglected entirely when safety demanded them. And there was not the official inspection and supervision of later days. There were, and occasionally still are, explosions of the dreaded "fire-damp," in the parlance of the miners, and the deadly "after-damp" following such explosion. Improved ventilation systems have eliminated, in considerable degree, the dangerous mine gases.

There were scores of individuals and companies engaged in the business, some as producers only, but a considerable number shippers as well. This called for fleets of towboats and much greater fleets of coalboats and barges. Production and repair of these gave the boat-building industry along the river a mighty impetus in the period following the Civil War, when business of the passenger packets was just beginning to show the first symptoms of its decadence. Every considerable concern engaged in coal shipping had its extensive yards and drydocks, and the building and upkeep of coal craft of all kinds became an industry of the valley second only to the mining and shipping of the product itself.

Before the completion of government-built locks and dams in the upper Ohio—a recent development—shipments of coal were impeded, just as they were in the old coalboat days, by insufficient water frequently to float the heavily laden craft. In a prolonged season of drouth great fleets of these would accumulate, and shipping water, when it finally came, would witness stirring times in the pools and about the Pittsburgh harbor. There came to be a large number of towboats engaged in the trade, many of them of great size and power, but frequently, on the occasion of a rise, all of them would go with tows, crowding the river as they went, consigned to various points on the Ohio and Mississippi.

The old coalboat type of container continued to be used for carrying coal, but it was greatly enlarged by

lengthening, widening and deepening. And, contrary to the old custom, it was brought back for repeated trips to market, though usually needing some repair before being refilled. But, with the general use of the steamboat, came another type of container, the coal barge. This vessel was of much stronger construction and it had longer life. Its sides were of solid pine, six inches thick, and the bottom and rounded rakes at each end were heavily planked. The standards of capacity came to be about 30,000 bushels for the coalboat and 12,000 bushels for the barge (approximately 1,143 and 420 tons). The model barge, not common then, was of the marine type, keel and rib structure and pointed at prow and stem. Old steamboat hulls were thus used in some cases. Smaller models of the coal barge were known as flats, these often being used for fueling large towboats en route.

Some of the steamers used in the later years of the movement of Monongahela coal down the lower rivers, to the West and South, were monsters in size and power. Old boatmen along the Monongahela when they foregather still talk about the performances of the Sprague, Joseph B. Williams, W. W. O'Neil and other giants of their day which moved coal fleets measured by acres and comparable to small farms in extent.

The difficulties and delays of navigation of the upper Ohio were always handicaps to the movement of coal down that stream, and with the passing years there came competition in the trade as coal production developed in other fields, particularly in the southern states. The output from the government-improved Kanawha became an active competitor and the coal regions of Alabama and others of the states near the southern markets were reaching in constantly growing amount the markets long supplied by coal from the Monongahela, bringing noticeable cuts in the volume of trade and its profits. There were complaints also of ruinous price-cutting on the part of some Monongahela shippers and rapidly growing use of natural gas in the local field. These things created a situation which brought the surprising result of almost unanimous action on the part of interests engaged in Monongahela River coal production and shipping, in disposing of their holdings when

the organization popularly known as the River Coal Combine was formed.

The Monongahela River Consolidated Coal and Coke Company was organized in the year 1899, with a capital of \$40,000,000. Nearly all of the individuals and companies engaged in the coal business of the river surrendered their holdings to it, with mines, steamboats, coal craft, mills, yards, docks, marine ways and other property along the Monongahela, besides coal landings, yards and elevators along the Ohio and Mississippi. Some of the former operators took stock to some extent in the new concern. The stock was greatly over-subscribed. Among properties taken over were, in addition to mines in operation and coal in the hills, about 100 towboats and tugs and thousands of coal containers.

The Combine was enabled to bring about many economies in mining, handling and marketing its product, and its business prospered in the years following. When it was brought into being there had already been formed the Pittsburgh Coal Company, which had in somewhat similar manner combined nearly all the mining properties in the same district which shipped their product by rail, and that traffic had then attained huge proportions. Some years later that concern took over the River Combine and is now the most extensive coal operating concern in the country.

As the coal became worked out of the hills bordering the river and the deposits lying back some miles could be worked more advantageously with rail shipment, operations along the first three pools of the river in time practically ceased. But a greater river shipping business than ever before was built up, originating in pools farther up, as will be set forth in a later chapter.

An industry closely related to the coal business as it has been treated in these pages is that of coke, a coal product. As it enters so largely into the making of steel, it has an important place in the activities of the region of which this volume treats. Coke has long been made in the region, but, owing to the fact that the coal deposit in the valley of the Youghiogheny, about thirty miles from its mouth and for considerable distances on each side of it, was found to be peculiarly well adapted to coke making under

the process long in vogue, the industry centered largely there and attained vast proportions.

Because of its situation, the product of this industry was largely shipped by rail, but under changed conditions it has come to be a great contributor to traffic on the water of the Monongahela. Connellsville coke, as it came to be known, became the standard of excellence the world over. In the final twenty years of the last century and as many years in this one, coke making in that district attained a volume that was wonderful, and vast fortunes were made in its production and handling. Many thousands of the flaming beehive type of coke ovens lined many miles of railroads passing through the section, throwing a pall of smoke over the whole landscape by day and presenting a weird spectacle at night. In recent years activity there has greatly fallen off, some of the reasons for which will be noted. Thousands of the ovens are dead, cold and falling into ruins.

Coke making in a small way was followed for many years at some of the mines along the Monongahela, but it never attained great proportions nor did it last long in any particular place. It came to be recognized in recent years that the old process of making coke was wasteful in a high degree. Coke, the carbon skeleton of the coal remaining after the volatile elements were expelled, was the only product saved. In the making of it vast treasure was dissipated in smoke, for many other elements in the coal have high value. Much experimenting was done in this country and Europe, and more than one plant was erected and operated in the Pittsburgh District. Improved processes were developed and it was demonstrated that coke of excellent quality could be made, and at the same time valuable products in gases, acids and other chemicals in liquid and solid forms be saved. As, indicating the wastefulness of the old process of coke making, a report of the Smithsonian Institute, as result of a study of natural resources, is illuminating. This report states:

In 1920 there were 24,000,000 tons of coal used to make 16,000,000 tons of beehive coke. The principal by-products that were wasted from this source were: 216 million gallons of tar; 600 million pounds of ammonium sulphate, which could be used as fertilizer; and 120 billion cubic feet of gas, which could be used, the same as manufactured gas, for public utility service.

The by-product process has come to be the approved method of coke making, and is responsible, in considerable measure, for the decline of the Connellsville region in production of this commodity. Working out of the coal adjacent to the ovens of many plants is another cause. Utilization of the coke basin gradually proceeded south-westwardly across Fayette County and reached the Monongahela River, where now is one of its busiest districts. And coal produced in this district is also shipped down the river in great quantity for manufacture into coke by the improved by-product process. Concerning the coke industry in this district, the "Pittsburgh Post-Gazette" of October 8, 1925, said:

Pittsburgh is the center of the coke industry of the United States and the production of coke is one of the district's leading manufactures. The total value of the product of the Pittsburgh area coke ovens is more than \$200,000,000 annually. On the coking qualities of the coal found in the district is based Pittsburgh's greatness as a large scale producer of iron and steel. The coke produced from the coals is almost perfect for metallurgical purposes. In it lies the solution of the fuel problem of the blast furnaces which produce the iron. Approximately 70 percent of the beehive coke produced in the United States is burned in the Pittsburgh District. The 40,000 ovens supplying this product yield about 17,000,000 tons each year.

The by-product coke oven is now the principal process by which metallurgical coke is made. Other commodities are recovered as by-products in the yielding of materials for making various chemical dyes, explosives and fertilizers. The by-product plants, located at sixteen places in the district, produce 11,500,000 tons of coke annually. This constitutes about one-third of the production of the United States. By-products valued at more than \$100,000,000 total about 175,000,000 cubic feet of gas; 134,000,000 tons of tar; 25,000,000 gallons of motor fuel; and 175,000 tons of ammonium sulphate. The coke industry in the Pittsburgh District gives employment to 9,000 men. At the present time enlargement of plants and additional equipment, representing an investment of \$25,000,000, will materially increase production and necessitate more man-power. Coke is allied with steel, and in both of these industries the Pittsburgh District is the leader.

Coal produced along the Monongahela River supplies a number of by-product coke plants. The one in connection with the Carnegie-Illinois Steel Company's works at Clairton is much the largest such concern in the world. Its entire vast coal consumption is derived by river shipment from the upper pools of the river, with daily consumption of 30,500 tons of coal in normal times. This means the

contents of 36 great barges each day, to supply which an average of nine powerful towboats are required to be in constant service.

Much prospecting has been done in the valley of the Monongahela to discover petroleum in paying production, but without any great measure of success. Within two years after the successful drilling in the upper Allegheny valley, or in 1861, oil was found in a number of wells drilled along Dunkard Creek, which flows into the Monongahela from the west side, in Greene County. The production there was deemed sufficient to justify continued operation, and these wells were active for a considerable number of years thereafter. Good showings of oil were found in Fayette County, near Geneva, and in Allegheny County, not far from Elizabeth, but not in sufficient quantities to warrant further development. But some great production fields were developed forty and more years ago in Washington County, twenty to thirty miles from the river, and are still producing oil.

The quest for natural gas has been more successful in the valley. Convenient to the river and on both sides of it, in the vicinity of Elizabeth, strong flows of gas were encountered with extensive drilling operations in the nineties and since, and the field is still having good production. The same is true of the region about Belle Vernon and some other sections along the valley, in Pennsylvania and West Virginia. In the years of the first strong flows from wells in the Pittsburgh District the product was largely used in various lines of manufacture, and for a time displaced coal in considerable measure. In glass making and some other lines it still is employed, but no longer has extensive use in metal working, its chief use being in the homes of the region.

"Youghiogheny Coal"

During many years of the shipping of coal by river to the markets of the west and south, the best grades came to be known as "Youghiogheny Coal." There was a period in which coal was floated out of the river named and went, along with much greater quantities produced along the Monongahela, in shipments. Whether some of this at some

contents of 30 great barges each day, to supply which an average of nine powerful towboats are reputed to be in constant service.

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The quest for natural gas has been more successful in the valley. Convenient to the river and on both sides of it, in the vicinity of Elizabeth, strong flows of gas were encountered with extensive drilling operations in the nineties and since, and the field is still having good production. The same is true of the region about Belle Vernon and some other sections along the valley, in Pennsylvania and West Virginia. In the years of the first strong flows from wells in the Pittsburgh District the product was largely used in various lines of manufacture, and for a time displaced coal in considerable measure. In glass making and some other lines it still is employed, but no longer has extensive use in metal working, its chief use being in the homes of the region.

"Youghiogheny Coal"

During many years of the shipping of coal by river to the markets of the west and south, the best grades came to be known as "Youghiogheny Coal." There was a period in the early years of the river trade when the coal was shipped out of the river named and went, quantities produced along the river. Whether some of this at some

time was of peculiar excellence, or for whatever reason it was, the name of the branch river became associated in the minds of buyers in the down-river places with particularly good coal, and commanded a little better price when thus marketed.

As noted elsewhere in this work, a beginning was once made in the slackwater improvement of the Youghioghenny, but the works thus erected lasted only a few years, terminating in the sixties of the last century. For a few years thereafter some coal was floated out of the lower portion of that stream, from the few remaining mines, when its waters, in times of freshet, made that possible. But the quantity never was large, as compared with that which was mined along the larger river.

But dealers capitalized on the trade name and advertised it when offering fuel for which special excellence was claimed. In time all of the product sent from the Monongahela was sold as "Youghioghenny Coal." Market quotations gave prices for first-pool "Youghioghenny" or second or other pool, many years after that stream had any pools except those provided by nature. Coal in immense quantities was sold under the Youghioghenny name which was never nearer that stream than to pass its mouth if it was mined higher up along the Monongahela. The trade name persisted as long as the river shipments to the ports on the lower Ohio and the Mississippi continued.

The "Bulldozer"

Ice is a constant menace to the river traffic in the winter, and through the years there has been much of loss occasioned by it. Especially was this true in the era of wooden construction of all river craft. At the time when production of coal was great in the lower pools and it could be moved down the rivers only when the water in these was above the normal stage, great fleets of the loaded containers often would accumulate along the shores. These were protected in a measure by ice-breakers in the form of abutments built in the river, near the shore, above the several "harbors." These structures were great log cribs, filled with stones, and were intended to prevent floating ice or logs from crashing into the coal craft.

But sometimes there were successive weeks of hard freezing and ice in the river would attain great thickness and strength. If a sudden thaw should come, attended by rainfall which carried much water into the channel of the stream, there was danger of a movement of the great mass of ice in which the river craft was firmly held, with all going off at once. Sometimes, under such circumstances, resort was had to sawing an opening along outside of the moored craft, but if the ice were very thick this was a most difficult undertaking. And it was not always effective even if successfully accomplished, because the thickness of a saw left no room for lateral movement of the floating ice.

When the ice in the Monongahela broke in January, 1877, greater destruction and loss resulted than on any such occasion before or since. A considerable number of steamboats and many coal craft, loaded and empty, were destroyed. It was realized for some weeks before that the thick ice in the river was a great menace. One means of combatting it was by use of a device invented by John Nixon O'Neil, of Elizabeth, a prominent coal operator of the time. A square craft about twenty feet each way and six or more feet deep was built of heavy timbers, vertical on all sides except its front. That was sloped backward down from the top and under the water, and a number of lengths of steel rails such as are used for railroad tracks were bent down around this front and firmly attached.

The contrivance was then loaded with stone, sinking it well down in the water. It was lashed in front of a powerful towboat and pushed through the ice, which was crushed down under it. By its use open tracks were broken along both sides of the river for some distance and there was comparatively light loss there when the ice moved out. At that time a popular expression in the newspapers and on the stump was "bulldozer," applied to a certain group in the politics of the time. It carried an implication of ruthlessness, and Mr. O'Neil appropriately called his device "The Bulldozer." Other like craft were built on its model later with good results in overcoming the peril of the ice. So that type came to be known as bulldozers.

Steamboats of Yesterday and Today

A roster of the names of all steamboats that have navigated the Monongahela River in the century and a quarter since the first one ploughed its waters would be a long one and interesting in many ways. Such a list cannot be given here, but the author does have the names of boats seen on the river in periods of great activity in its navigation, which are given below. In its issue of January 9, 1902, the "Elizabeth Herald" published the names of all self-propelling boats which passed through Lock No. 1 during the course of the year 1901. The list included much the greater part of the steamers then active on the river, but there were some others, as shall appear, and a mighty fleet engaged in moving Monongahela Valley coal which never came into the pools of this river. Following is the 1901 list:

Packets

Adam Jacobs	Francis J. Torrance	Lee H. Brooks
Admiral Dewey	I. C. Woodward	Olivette
Edgar Cherry	Isaac M. Mason	Rose Hite
Elizabeth	James G. Blaine	

Towboats

Acorn	D. T. Watson	Gleaner
Adella	Dauntless	Gold
Ajax	Dave Wood	Gwendoline
Alcedo	Defender	G. W. Thomas
Argand	Delta	Harmony
B. D. Wood	Dewing Sons	Harry No. 2
Belle McGowan	Diana	Harry P. Jones
Bertha	Ed Roberts	Hawk
Boaz	Eleanor	Hazel L. Watson
Bob Connell	Enterprise	Hunter No. 2
Braddock	Esplen	Idler
Cascade	Fallie	I. N. Bunton No. 2
Charlie Clark	Fayette	Independent
Charlie Hook	Fay S.	Iron Age
Charlie Jutte	Firefly	Ironsides
Charles Turner	F. K. Hulings	Jessie
Charlotte	Ford City	Jim Brown
Clarion	Frank Gilmore	John C. Risher
Clifton	Fred Wilson	John Dippel
Clipper	Gazelle	John Moren
Cruiser	George Brawdy	John W. Ailes
Cyclone	George W. Moredock	Joseph Walton

Julia B.	Neptune	T. J. Wood
Juniata	Olive	Tom Lysle
Kathryn	Ollie Nevin	Tornado
Leader	Pittsburgh	Troubadour
Little Bill	P. M. Pfeil	Twilight
Little Dick	Princess	Two Brothers
Little Fred	Quail	Valley Scout
Loma	Raven	Venice
Lookout	Rebecca	Vigilant
Lulu F.	Return	Volunteer
Maggie	R. L. Aubrey	Voyager
Margaret	Robert Jenkins	Wasp
Mariner	Robert McKinley	Wauneta
Mayflower	Robert Taylor	W. C. Jutte
M. D. Wayman	Sailor	W. H. Flint
Mike Dougherty	Sanford Hay	William Duffy
M'Liss	Shamrock	William G. Horner
Monterey	Slackwater	Wilmot
Monongahela	Stella Moren	Winifrede
Muscogee	Tide	W. R. Graham
Nellie Walton	Titan	

In the foregoing list of towboats a few are remembered to have been screw-propeller tugs, but nearly all of them were of the regular type with paddle-wheel at the stern. The Slackwater was owned by the United States Government and was employed in work of lock repair. Nearly all of the towboats listed were those known as pool boats, their chief activity being the towing of coal craft to and fro in the pools of the Monongahela. But in addition to them there was a fleet of huge and powerful steamers which did the work of towing on the Ohio and Mississippi Rivers of coal produced in the valley of the Monongahela. In times following periods of prolonged drouth, when there was a great accumulation of coal which must be moved quickly on the crest of a flood, various pool boats "went below," as it was said, with tows of coal also. Of the packets named in the foregoing list, the Adam Jacobs, Elizabeth, Francis J. Torrance, I. C. Woodward and James G. Blaine were of the large side-wheeler type and the others were smaller stern-wheel boats.

One reason why the great towing steamers employed on the Ohio and Mississippi were seldom, and in the cases of many of them, never seen in the pools of the Monongahela lay in the fact that these could be taken there only

with great difficulty. Owing to the size of most of them, the locks and bridges of the lower Monongahela offered impediments to their easy handling there. Below is given a complete list of these lower river movers of Monongahela coal in the year 1902. It has been compiled from a United States Government publication, "Thirty-fourth Annual List of Merchant Vessels of the United States," for the year ending June 30th of the year named. Here is the list, alphabetically arranged:

Name of Boat	Gross Tons	Length, ft.	Width	Depth	Crew
Alice Brown	551	193	34	4	40
Charles Brown	544	200	33	6	40
Coal City	361	170	32	5	35
Dick Fulton	357	170	31	6½
Enterprise	226	150	27	5	23
Exporter	578	186½	35	6	35
Fred Wilson	523	174	30	5½	35
Harry Brown	604	205	42	5	50
Harvester	530	185	34	6	31
James Moren	602	186	34	5	35
Jim Wood	525	169	32	6	30
John A. Wood	687	198	40	7	50
Joseph B. Williams	801	210	40	6½	50
Joseph Walton	300	158	27	5	28
Josh Cook	384	165	30	5	35
Oakland	628	210	35	6	35
Pacific No. 2	570	176	32	5	35
Raymond Horner	688	195	45	6½	50
Sam Brown	474	177	39	7	30
Samuel Clark	435	175	33	6	35
Tom Dodsworth	500	182	35	6	35
Tom Rees No. 2	327	168	29	5½	35
Valiant	307	163½	28	5	35
W. W. O'Neil	778	201	46	8	50

The same publication gives the following smaller tow-boats having Pittsburgh registration in that year, in addition to the list given earlier as having passed through Lock No. 1 in the year 1901:

Aid	G. W. Thomas	Steel Queen
Cadet	Harriet	Thomas Heidel
Clara Cavett	Homestead	Transit
Ella Andrews	Hornet No. 2	Vanguard
Frank Fowler	Laurel	Vulcan
Fulton	Nellie Brown	Wash Gray
	S. S. Prentiss	

and is based on the use of the "standard deviation" of the sample distribution. This is not the case in the present case, where the "standard deviation" is not used, but the "variance" is. The "variance" is the square of the "standard deviation," and is a more accurate measure of the spread of the data. The "variance" is also used in the calculation of the "coefficient of variation," which is a measure of the relative spread of the data. The "coefficient of variation" is calculated by dividing the "standard deviation" by the "mean," and is a useful tool for comparing the spread of different data sets.

Year	Population	Population	Population	Population	Population
1900	100	100	100	100	100
1910	110	110	110	110	110
1920	120	120	120	120	120
1930	130	130	130	130	130
1940	140	140	140	140	140
1950	150	150	150	150	150
1960	160	160	160	160	160
1970	170	170	170	170	170
1980	180	180	180	180	180
1990	190	190	190	190	190
2000	200	200	200	200	200
2010	210	210	210	210	210
2020	220	220	220	220	220
2030	230	230	230	230	230
2040	240	240	240	240	240
2050	250	250	250	250	250
2060	260	260	260	260	260
2070	270	270	270	270	270
2080	280	280	280	280	280
2090	290	290	290	290	290
2100	300	300	300	300	300

The following table shows the population of the United States from 1900 to 2100. The population is shown in millions. The population is projected to increase from 100 million in 1900 to 300 million in 2100. The population is projected to increase at a rate of 1% per year. The population is projected to increase at a rate of 1% per year.

Year	Population	Population
1900	100	100
1910	110	110
1920	120	120
1930	130	130
1940	140	140
1950	150	150
1960	160	160
1970	170	170
1980	180	180
1990	190	190
2000	200	200
2010	210	210
2020	220	220
2030	230	230
2040	240	240
2050	250	250
2060	260	260
2070	270	270
2080	280	280
2090	290	290
2100	300	300

Passenger boats of the time engaged in short runs on the Monongahela included the Florence Bell, Gertrude, Nellie Hudson No. 2, Wabash and Winnifred. Steam yachts were Alma C, Cara, Cherokee, Pastime, Seneca and Skibo. Dredge boats were Ed Davison, Little Ike and T. J. Garlick. Ferry boat, the Short Cut.

Soon after the River Combine began its operations in handling practically all of the coal producing and shipping by water in the valley of the Monongahela, it built another to add to the big towboats on the rivers below Pittsburgh. This one was the J. B. Finley, and it ranked among the great ones of that notable fleet. It was launched in 1900 at the Elizabeth Marine Ways, which was then the chief center of industry in boat building and repairing for the big concern. This company, with its successor, the Pittsburgh Coal Company, added other towboats, chiefly for pool towing, through the years.

J. Will Lynch, of Elizabeth, was foreman at the Marine Ways through years of these activities, and for some time before his retirement was the superintendent there. He has a most retentive memory and it is aided by carefully kept records of matters connected with the rivers and their activities. These have been of great value to the author in preparation of various parts of this work. It is made possible thereby to give a complete list of the self-propelling boats belonging to the Pittsburgh Coal Company in 1910, and it follows:

Acorn, Alice Brown, B. D. Wood, Belle McGowan, Bertha, Boaz, Cadet, Carbon, Charles Brown, Charlie Clark, Clipper, Coal City, Cruiser, Crusader, Cyclone, Dave Wood, Delta, Defender, Dick Fulton, Duquesne, Ed Roberts, Enterprise, Exporter, Fallie, Fred Hartweg, Fred Wilson, Fulton, H. P. Jones, Harry Brown, Hawk, Henry Lowrie, I. N. Bunton, Iron Age, Ironsides, J. B. Finley, J. C. Risher, James Moren, Jim Brown, John A. Wood, John L. Penney, John W. Ailes, John Moren, Joseph B. Williams, Joseph Walton, Josh Cook, Little Fred, Mariner, Monterey, Oakland, Pacific No. 2, Percy Kelsey, Sprague, Pittsburgh, Ranger, Raymond Horner, Relief, Resolute, Rival, Robert Jenkins, Rover, Sam Brown, Sam Clark, T. J. Wood, Tide, Tom Dodsworth, Tom Lysle, Tom Rees No. 2, Tornado, Transit, Twilight, Valiant, Volunteer, Voyager, W. W. O'Neil.

The foregoing vessels were all engaged in towing coal in the rivers. The same concern owned the propeller-tugs named below, used principally about the harbors where

fleets of coal craft were moored. Some of these were at down-river landings and were not seen in the Monongahela.

Aid, Corsair, Laurel, Major, Maud Wilmot, Mike Dougherty, Mon-gah, N. M. Jones, Nellie Brown, R. W. Wilmot, S. S. Prentiss, Sadie Parker, Thomas Heidel, Vanguard, W. G. Wilmot, W. H. Wood, Wash Gray, Wasp, White Water.

The Active, Beacon and Conqueror were added to the company's fleet of towboats in 1915. But even before that time the older boats of the line began to be retired. A number of them, including some of those notable for their performances in earlier years, were condemned and beached along a stretch of riverfront below West Elizabeth. This place was known locally as "The Boneyard." These old boats remained there for some years, and others were added to the collection from time to time. It was a melancholy sight to see these giants of a mighty traffic now idle, slowly rotting and falling into ruins. Those first brought there included the Pacific No. 2, J. A. Donaldson, Clipper, Little Fred, Cadet, Wash Honsell, John A. Wood, Alice Brown, Voyager, Sam Clark, Pittsburgh, Robert Jenkins, Henry Lowrie and Duquesne. After some years thus, these boats were dismantled, their iron parts salvaged and the inflammable portions burned. Mr. Lynch gives information concerning various others of the old boats of that fleet, which saw their ends in the vicinity of the Elizabeth works, as follows:

The following boats were beached and burned above the mouth of Fallen Timber Run: Dave Woods, Coal City, Ed Roberts, Resolute, Iron Age, and Wash Honsell. The W. W. O'Neill burned on the shore at the upper end of the Clairton slag fill, November 28, 1913. High water broke her loose from the landing above. The tugboats Wasp and Aid were burned March 18, 1914, at the old Walton yard. The Raymond Horner, Boaz and Tom Dodswoth were wrecked at the same place June 9 to July 23, 1924, and later their hulls were sold.

He tells also of the final fate of various others of the Pittsburgh Coal Company's fleet of steamers:

The Sam Brown exploded her boilers and sank February 2, 1916, at Huntington, W. Va. Ten men were killed, including these four that I knew very well: Lew Blair, captain; Perry Wilson, engineer; William Hyser, steward; Charles Shaffer, cook. (The same day the packet Lorena burned at Parkersburg and the packet Ohio burned at Point Pleasant, W. Va.) The Harry Brown was sunk and wrecked in the Mississippi River in November, 1915, a total loss. The Fred

It is a well-known fact that the American people are not properly educated in the principles of medicine. The average citizen is not able to distinguish between the various schools of medicine, and is often misled by the claims of quacks and charlatans. The purpose of this article is to provide a brief history of the various schools of medicine, and to show how the American people have been misled by the claims of quacks and charlatans.

The history of medicine in America is a long and complicated one. It begins with the early settlers, who brought with them the medical knowledge of their native lands. The first medical schools in America were founded in the late 18th and early 19th centuries. These schools were founded by men who were trained in the medical schools of Europe. They were the only medical schools in America at that time, and they were the only ones that were recognized by the government. The American people were not able to distinguish between the various schools of medicine, and they were often misled by the claims of quacks and charlatans. The purpose of this article is to provide a brief history of the various schools of medicine, and to show how the American people have been misled by the claims of quacks and charlatans.

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Wilson's boilers exploded May 29, 1904, and Captain Price and ten others were killed.

The following boats were lost on the lower rivers: Jim Wood, sunk and wrecked. Percy Kelsey, boiler explosion. Defender, Joseph B. Williams and J. B. Finley, all burned with total loss. Belle McGowan, Acorn and Monterey, sunk and lost in a storm. John A. Wood, burned. Exporter, Josh Cook, John Moren, Crusader, Relief, Tom Rees and Charles Brown, all sank with total loss. All of these losses were in the Ohio and Mississippi Rivers.

Some steamers were sold by the company and taken elsewhere. So far as Mr. Lynch can learn with certainty, the Sprague, greatest of all of them in size and power, is the only one still in commission of the fleet of nearly one hundred steamers owned by the Pittsburgh Coal Company in the early years of the present century. It is engaged in towing on the Mississippi, between St. Louis and New Orleans, for the Standard Oil Company. He heard of the James Moren in recent years, but is not certain as to its present status. Mr. Lynch's interesting recital concludes with this information:

I have seen the sawmill at the Elizabeth Marine Ways and the industry which preceded it at the same location burn four times: July 11, 1869, total. November 22, 1902, partly destroyed. February 9, 1908, saw mill, planing mill, pump shop, joiner department, stock house, tinner shop and old brick office building burned down, with loss of \$40,000. March 4, 1913, mill totally destroyed. The works were promptly rebuilt each time.

These works have lost in recent years some measure of their old-time activity, chiefly because of the substitution of steel for wood construction of boats, but continue to be the chief repair yards of the Pittsburgh Coal Company.

Below is given a compilation made by the author, with the aid of a number of men engaged in river activities, which aims to give a complete roll of the self-propelled boats operating on the Monongahela River at the time this book makes its appearance. It is believed to be practically complete and is as nearly so as careful work could make it. Not a passenger packet remains in service, traversing the river. The boats to be named are engaged in moving the various commodities of a traffic greater than was ever before known on the stream. Coal leads in these, but there is also a vast tonnage of steel products, gasoline, building materials and other things. In this list the boats are given

by fleets, the name of the concern or individual owning them first and the boat or boats following. All craft listed are towboats unless otherwise designated. Most of them are steamers, but some are gasoline-propelled. In general they are modern craft and a goodly number are of the latest types in construction and equipment.

Carnegie-Illinois Steel Corporation: Allegheny, A. O. Ackard, City of Pittsburgh, Clairton, Donora, Duquesne, Edgar Thomson, Homestead, I. Lamont Hughes, James E. Lose, Monongahela, Thomas Moses, W. H. Clingerman, William Whigham, Una, Carnegie No. 1, Carnegie No. 2. The three last named are landing boats, used only in shifting craft about in the harbors.

Vesta Coal Company (subsidiary of Jones & Laughlin Steel Corporation): Aliquippa, B. F. Jones, Jr., Henry A. Laughlin, Sailor, Titan, Trojan, Vesta, Vulcan, Warren Elsey, W. Larimer Jones. The Henry A. Laughlin is a screw-propeller.

McCrady-Rodgers Company: Charlotte, J. H. McCrady, Margaret, Patsy, Rebecca, W. B. Rodgers. The Charlotte and Rebecca are sand dredgers. A pleasure launch owned by the same company is the Early Bird.

Keystone Sand and Supply Company: Betty, Dorothy, Martha, Mary Alice, Pioneer, Victory, Virginia.

Campbell Transportation Company: Charles T. Campbell, D. W. Wisherd, Fairplay, John G. Britton, John W. Hubbard, Shawnee.

Union Barge Line: C. W. Talbot, J. D. Ayers, Neville, Peace, Reliance, Sam Craig.

Iron City Sand and Gravel Company: Elizabeth Pfeil, Iron City, Monarch, Res-Q, Steel City. The Elizabeth Pfeil and Monarch are sand dredgers.

Zubik Towing Company: Atlas, Beacon, Bernice, Miami, Nauvoo, Smoky City.

United States Government: Kinzua, Nemacolin, Pennova, Shenango, Tecumseh.

Hillman Transportation Company: A. B. Sheets, J. H. Hillman, Henry A. Roemer, William C. Sutherland.

Pittsburgh Coal Company: Champion Coal, Crescent, Ranger.

Crucible Fuel Company: Atha, Crucible, Midland.

Wheeling Steel Corporation: Benwood, Carbon, LaBelle.

American Barge Line: American, Inland, Plymouth.

Allegheny Sand and Gravel Company: E. K. Davison, Elizabeth Smith.

Richard J. Hiernaux: Leona, Richard.

Webster Towing Company: Coal City, Prosperity.

Pittsburgh Plate Glass Company: Wacouta.

John Hysmith: Sewickley.

Clyde Paden: Diesel.

McClain Sand Company: J. C. McClain.

Robert J. Hasley: Burlington.

Clarence Grimm: Rainbow.

The first of these was the discovery of gold in California in 1848. This led to a great influx of people to the state, and the population grew rapidly. The second was the discovery of gold in Nevada in 1859. This also led to a great influx of people to the state, and the population grew rapidly. The third was the discovery of gold in Colorado in 1858. This also led to a great influx of people to the state, and the population grew rapidly.

The fourth was the discovery of gold in Idaho in 1860. This also led to a great influx of people to the state, and the population grew rapidly. The fifth was the discovery of gold in Montana in 1862. This also led to a great influx of people to the state, and the population grew rapidly. The sixth was the discovery of gold in Wyoming in 1863. This also led to a great influx of people to the state, and the population grew rapidly.

The seventh was the discovery of gold in Utah in 1864. This also led to a great influx of people to the state, and the population grew rapidly. The eighth was the discovery of gold in Arizona in 1865. This also led to a great influx of people to the state, and the population grew rapidly. The ninth was the discovery of gold in New Mexico in 1866. This also led to a great influx of people to the state, and the population grew rapidly. The tenth was the discovery of gold in Texas in 1867. This also led to a great influx of people to the state, and the population grew rapidly.

The eleventh was the discovery of gold in Louisiana in 1868. This also led to a great influx of people to the state, and the population grew rapidly. The twelfth was the discovery of gold in Mississippi in 1869. This also led to a great influx of people to the state, and the population grew rapidly. The thirteenth was the discovery of gold in Alabama in 1870. This also led to a great influx of people to the state, and the population grew rapidly. The fourteenth was the discovery of gold in Georgia in 1871. This also led to a great influx of people to the state, and the population grew rapidly.

The fifteenth was the discovery of gold in Florida in 1872. This also led to a great influx of people to the state, and the population grew rapidly. The sixteenth was the discovery of gold in South Carolina in 1873. This also led to a great influx of people to the state, and the population grew rapidly. The seventeenth was the discovery of gold in North Carolina in 1874. This also led to a great influx of people to the state, and the population grew rapidly. The eighteenth was the discovery of gold in Virginia in 1875. This also led to a great influx of people to the state, and the population grew rapidly.

The nineteenth was the discovery of gold in West Virginia in 1876. This also led to a great influx of people to the state, and the population grew rapidly. The twentieth was the discovery of gold in Maryland in 1877. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-first was the discovery of gold in Delaware in 1878. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-second was the discovery of gold in Pennsylvania in 1879. This also led to a great influx of people to the state, and the population grew rapidly.

The twenty-third was the discovery of gold in New Jersey in 1880. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-fourth was the discovery of gold in Connecticut in 1881. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-fifth was the discovery of gold in Rhode Island in 1882. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-sixth was the discovery of gold in Massachusetts in 1883. This also led to a great influx of people to the state, and the population grew rapidly.

The twenty-seventh was the discovery of gold in New Hampshire in 1884. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-eighth was the discovery of gold in Vermont in 1885. This also led to a great influx of people to the state, and the population grew rapidly. The twenty-ninth was the discovery of gold in New York in 1886. This also led to a great influx of people to the state, and the population grew rapidly. The thirtieth was the discovery of gold in New England in 1887. This also led to a great influx of people to the state, and the population grew rapidly.

One familiar with the river in past years is struck by some things in connection with the foregoing lists. Not an owner of craft mentioned in the 1902 list has representation among the boat owners of 1937. In 1910, after the Pittsburgh Coal Company had taken over the holdings of the River Combine, it owned 74 towboats and 19 propeller-tugs. Now it has but three towing steamers, all practically new, but is having two more built, modern in every respect.



CHAPTER XXI

Manufacturing in Early and Later Times

The story of steel has been told often and well. But while steel has a commanding place in the marvelous development in that hive of industry known as the Pittsburgh District, and some of its outstanding works are in the valley of the Monongahela, the metal industry was not the first in being established here. And there were others, in addition to boat building and coal production, already treated, which grew up with it and made their contributions in this industrial development.

The earliest of these were in the Monongahela Country of old, and casual mention has been made of some of them, in referring to transportation activities. Among the very first were the making of flour and whisky, direct processes in transforming the products of the farm into manufactured commodities of commerce. Establishments for the making of these things were right on or adjacent to the farms, and they were scattered all over the region. There were also very early fulling and carding mills for the preparation of the native wool, and it was spun, woven and fashioned into garments in nearly every home. Tanneries were early established in many places, and the lumbering industry was carried on all over the region from early days.

Limestone in abundance everywhere yielded lime for building operations and fertilizing soils not provided with it. In the iron and steel smelting operations it made its valuable contribution. From nearly every hill could be quarried stone for building or paving. The great blocks which went into the first of the river locks were taken from the adjacent hills, and material for the cement was produced locally, while brick of various kinds were made from clays abundant in the region. The mountain quarries in Fayette County produced millstones and grindstones whose excellent quality brought demand for them resulting in large shipments down the rivers before the beginning of the nineteenth century.

Albert Gallatin pioneered in 1796 in the making of glass at his New Geneva and not long thereafter there were factories in production at Pittsburgh and Brownsville, followed by like activities at Greensboro, Fayette City, Belle Vernon, Monongahela and Elizabeth. In later years one of today's prosperous cities of the vale had its start in connection with the establishment of a great glass factory and named for a Belgian city famed for its like product—Charleroi. Later another town, for like reason, was named Glassport. Homestead and the present Clairton had important glass industries in the latter part of the last century.

Paper making was one of the early industries. The "Pittsburgh Gazette," pioneer newspaper west of the mountains, sometimes was sorely beset by the difficulties and restrictions of getting out a publication on time at a place so far removed from its source of supplies. At times its weekly issue was delayed a day or more in waiting for an expected supply of paper by wagon from east of the mountains, and at other times it put out such an issue as it could on cartridge paper borrowed from a supply kept at Fort Pitt. But in its issue of June 24, 1797, it joyfully announced that from that time it would be printed on paper manufactured by Jackson & Sharpless, on Redstone Creek.

Their mill was near Brownsville, and mention has been found of at least one other paper mill in the same vicinity. Later there were mills at Monongahela and on the opposite side of the river a little below; at West Newton, on the Youghiogheny, and on Sewickley Creek, a few miles from that river. Clearness and purity of the water in the streams made conditions favorable for this industry in the early days, but its contamination later made such production impossible.

Pottery was produced at works which existed for years at New Geneva and Greensboro, which face each other on the upper Monongahela, also at a point across the river from Fairmont, (now West) Virginia. Salt, which is a necessity in the glazing of this product, was furnished from works long maintained opposite the present Homestead, and salt wells were drilled, with works adjoining for the production of the commodity, operated elsewhere in the district.

The great iron industry west of the Allegheny Mountains had its beginning in Fayette County, Pennsylvania. Everts's and other histories of the county give some of the facts concerning this development. There were rich deposits of iron ore along the upper Monongahela, Youghiogheny and Cheat Rivers and creeks flowing into them. The earliest operations of smelting were carried on with charcoal as the heating agent. With the ore and the forests right at hand, it was natural that furnaces should be erected at the mines, and as early as 1790 such were being operated. Claim is made that the first such concern was that of Turnbull N. Marmie, on Jacobs Creek.

The output of pig-iron in this and other like concerns that sprang up near the ore deposits largely was sent by the rivers to Pittsburgh, to be worked up there, but some forges were early erected in the vicinity of the mines and their product also was shipped in considerable quantities. In succeeding years various such concerns were established and turned out large quantities of tools and implements of various kinds, including kettles for making salt and sugar. The last named receptacle especially was in demand by planters in the south, and large numbers of the kettles were shipped down the rivers for them. County histories enlarge on these things.

Everts makes the claim that by 1810 there were more iron products being turned out in this Fayette County district than at Pittsburgh, and the same authority asserts that in 1816 the first rolling mill west of the mountains was constructed and put in operation by Colonel Isaac Meason, on Redstone Creek. It has been seen earlier in this work that the building of steamboats brought about various concerns for the making of engines, boilers and other things used in the outfitting of the boats in Pittsburgh. Other iron working establishments gathered around these, and soon this character of work was so typical of the place that for many years it was popularly known as the Iron City.

Brownsville also had its engine and boiler works, in connection with the building of steamboats, and other metal working concerns were established there in the course of the years. The W. D. Wood & Co. rolling mill was established at McKeesport before the Civil War, and as its pro-

duct was a specialty in the form of a planished sheet iron, used for making the jackets of locomotives, then largely coming into use with the railroad expansion of the time, it was an instant success and did a thriving business for many years. In 1870 the National Tube Company of Boston, Massachusetts, with an exclusive and improved process of making iron tubing, established its chief works at McKeesport. Oil development of the time made this a success, and it grew to mammoth proportions. The foregoing were practically all of the places where there were metal working concerns of considerable consequence in the Monongahela Valley above Pittsburgh at that time.

Meanwhile that city's metal industries had thriven and grown. They took on new activity after the Civil War. Improved processes were adopted in treatment of the ore, then largely being shipped in by rail from other sections, following the exhaustion of deposits in the nearer fields. Other improvements were installed, old works enlarged and new ones built, and soon the whole range of metal working, from ore to a great variety of finished products was being covered. The era of railroad expansion and oil development contributed largely to this growth.

Pittsburgh's earliest factories, as has been noted, were built along the foot of the hill, across the Monongahela from that down-town section which denizens of the city today like to call the Golden Triangle. From there the industrial district spread up through old Birmingham, now the South Side district of the city. Then it leaped across the river to make the old Kensington and Soho districts. From there it went to the borders of the Allegheny, on the old city side, but soon passed over to the present North side, then the City of Allegheny. By the seventies of the last century eligible sites for manufacturing were about all taken in Pittsburgh and its immediate environs, so projectors of new enterprises in the expansion of that time began to cast their eyes outside its limits for suitable locations.

The river valleys offered the natural outlets for this movement, and improved shipping facilities of the Monongahela gave it an advantage which resulted in its first benefitting by this expansion. Andrew Carnegie and the men associated with him were then beginning to reach out from

the entrenchments of their Pittsburgh mills, (deemed great then, but pygmies when compared with what were to come) and to lay the foundations of the mighty industrial structure to grow within the space of a few years.

Their first such work was the Edgar Thomson plant at Braddock. Furnaces and mills were built, covering many acres, in which iron ore, coke and limestone, dumped into the furnace stack, were poured out a molten stream of fire, and this, after its several processes in the other great furnaces and mills, came out steel rails, ready to be laid down on the ties and bear much of the traffic of a nation. But this, vast beyond anything of the kind ever seen in the country before, was only the beginning.

Across the river, only a few miles below, where Pittsburgh's charitable institution known as the City Farm had long had its quiet and uneventful existence, another similar mammoth in steel sprang up, and Homestead rapidly grew around it. The Carnegie group soon had this in control. Then, where peaceful farmland had been before, just above the Braddock plant and across the river, other great steel furnaces and mills were built, and before the denizens of the valley had ceased to wonder at the rapid changes being wrought, there was the City of Duquesne. The Carnegie interests soon had this on their string, and the same proceedings, in all essential particulars, converted the broad acres of another farm, a little farther up the valley into the City of Clairton and its great Carnegie works.

During the same period the Westinghouse works were established in a small way in the lower Turtle Creek Valley, to grow into the present giants in their varied lines. Other great works were built by other interests and grew until practically all available sites were occupied along the river to the mouth of the Youghiogheny. But that was by no means all of the movement. The third pool of the river saw great development of a similar character along its stretches. Where had been two other expanses of farm land two more cities sprang into being by the waving of the wand of Steel; and lo! Monessen and Donora. The old communities of Monongahela and Elizabeth experienced rejuvenation through the same influence.

Thus it came about that early in the twentieth century the lower Monongahela Valley became one of the greatest

industrial districts in the country, and some of its manufacturing were being acclaimed world-beaters in steel rails, iron pipes and plate glass. Steel still holds sway in the district, which successively had pre-eminence in boat building and bituminous coal production. A little later than its Monongahela Valley development, Pittsburgh's industrial expansion began to move up the Allegheny and down the Ohio, with great results to be seen today. But those are other stories than this work essays to tell.

Mistaken Identity

It used to be told of a resident of one of the quiet little communities on the Monongahela that he had business in Pittsburgh and when it was concluded he tarried there, dallying with the flowing bowl until all the day's boats had departed for up-river points. Towards evening he started to walk home, and when he began to feel drowsy he lay down in a sheltered place which offered itself by the way. It proved to be a rolling mill, but the condition of the individual was such that this was not perceived when he lay down and was soon wrapped in slumber.

Finally, after night had fallen, a punch from the toe of a foreman's boot aroused him somewhat. He gazed about and his bleary eyes took in sight of great and glowing masses rushing back and forth, sparks flying and a deafening roar filling his ears, while dark forms were seen flitting about in the glow. One of these seemed to tower over him, and he had visions of pitchforks tossing him into the midst of the fires he saw all about him. He threw up his hands and pleaded:

"O Mr. Devil, let me go this time and I'll never get drunk again."

CHAPTER XXII

Railroads of the Valley

Railroads have contributed in an important way to the development of the Monongahela Valley, and at the same time have brought notable changes in the course of events and proceedings there. They drove passenger boats from the river and took over the carrying of practically all of the valley's products except its coal for consumption in the local industrial district. But, on the whole, they have contributed in important degree to the upbuilding and expansion of the things which make for success in industry and trade.

The Baltimore and Ohio was the first line to reach the river. As originally projected and as its name indicates, this pioneer railroad aimed to connect Atlantic tidewater by an iron roadway with the Ohio River. Its original main line to the west crossed the streams forming the Monongahela, but so far up that no important contribution was made to the development of the valley along lines which this volume has sought to set forth. The Tygart's Valley Branch was crossed at Grafton and the West Fork at Clarksburg. But another line, not at first a part of that system, came as the first railroad in the lower part of the valley, and destined to become an important link in travel and trade east and west over the Baltimore and Ohio.

This line was the Pittsburgh and Connellsville road, projected by Pittsburgh men and begun early in the forties. The Baltimore and Ohio, built from the east, reached Cumberland, Maryland, in 1842, and there was evident expectation of connecting with it by the Youghiogheny Valley route, though the Pittsburgh and Connellsville line was operated for a number of years by the management under which it was built. Its construction was slow work, and it did not finally reach Connellsville until 1861. It follows up the Monongahela as far as McKeesport, thence up the east bank of the Youghiogheny to Connellsville. The gap between Connellsville and Cumberland was closed in 1871,

the Pittsburgh and Connellsville line having become part of the Baltimore and Ohio system. In later years the Baltimore and Ohio aided development of the Monongahela Valley in West Virginia by the line from Connellsville, reaching the river at Morgantown and extending up along its east bank to connection with its old line to the west at Clarksburg.

The main line of the Pennsylvania Railroad was built in the fifties, the work extending over a number of years. In 1851 this work was under way on a number of different sections and late in that year the first passenger train was run between Pittsburgh and the lower Turtle Creek valley. Other sections were put in operation in the months following and the first through train between Pittsburgh and Philadelphia was run in the early weeks of 1854. The Pennsylvania Railroad acquired the state-controlled Pennsylvania Canal and the Portage Railroad over the main ridge of the Allegheny Mountains and soon put these once busy lines of transportation out of business. The effect of all these developments on the Monongahela packet trade has been seen, and it marked the beginning of the end for that activity.

There was a project for some years for a railroad up the west bank of the Monongahela from Pittsburgh, and this took form in the early seventies, resulting in the completion of the Pittsburgh, Virginia and Charleston Railway from Pittsburgh as far as Monongahela in 1873. In 1881 it was extended to West Brownsville. Later it became part of the Pennsylvania Railroad system. The line was extended up the river to Rice's Landing in 1906. Also a branch crossed the river at the mouth of Redstone Creek, with a spur into Brownsville proper, and extension up the creek, reaching Uniontown. Various extensions were built at different times, reaching mining settlements.

Pittsburgh business interests long complained of discrimination in freight rates, to the disadvantage of the city, and finally sponsored a move for an independent line to afford relief, which resulted in the building, in the late seventies, of the Pittsburgh and Lake Erie Railroad. It extended down the left bank of the Ohio River to the mouth of the Beaver, thence to Youngstown, Ohio, where connections were made, affording the competition desired. This

line later passed under control of the New York Central interests and became part of that system. Desiring to share in the great coke business of the Connellsville region, a line was projected and pushed through to completion in the year 1883. This project was the Pittsburgh, McKeesport and Youghiogeny Railroad, extending up the west bank of the Monongahela, through Homestead, crossing the river, thence through Braddock and McKeesport, across the Youghiogeny there and up the west side of that stream to Connellsville.

There were various moves for a line of railroad along the east side of the Monongahela, south of McKeesport, and more than one beginning was made on such a project. In the early eighties a charter was taken out for the Monongahela East Shore Railroad, by the Vanderbilt interests, controlling the New York Central lines. Some work of grading was done, but the project was abandoned. It was not until 1888 that work was begun on the road over this course which was finally pushed to completion. The prime mover in the project was Drake and Stratton, a contracting firm, and a charter was secured for the McKeesport and Belle Vernon Railroad. Work of building this line was begun early in the year named, and late in 1889 saw its completion to Belle Vernon.

There its terminus continued to be for six years. In the meantime it was acquired by the Pittsburgh and Lake Erie interests and has since been operated as part of the New York Central system. In 1895 it was extended two miles to Fayette City, with a line built from there a little later to a connection with the road under the same management in the Youghiogeny Valley. It was not until 1903 that this east shore line along the river finally reached Brownsville.

There were various projects for a railroad along the river, above Brownsville, to reach the rich West Virginia district and the sections intervening. Surveys and various moves were made by both the Pennsylvania and the New York Central interests through the years following the completion of lines up both sides of the river as far as Brownsville, and at various times it looked as if both would make extensions into that territory. But when finally there was action, these competing great systems did the surpris-

ing thing of building the line and operating it jointly. It is the Monongahela Railroad, extending from Brownsville to Fairmont, and it was opened for traffic in 1912. It continues to be thus controlled, each of the interests which have separate trackage between Pittsburgh and Brownsville using the Monongahela tracks for their trains between the place last named and the West Virginia city at the southern terminus. It carries, among other things, a very heavy coal traffic.

Competition Must Be Met

His name was not Jones, but that will do. He kept a little store in West Elizabeth and always chatted in a neighborly way with his customers and other callers. He thus acquired much of information concerning matters of the neighborhood, so the scribe who circulated through the community to round up its news for the local paper found it advantageous to keep in touch with him.

It was a time when there was keen competition between the two lines of railroad along the valley, and various inducements were offered the traveling public to attract business. The Pennsylvania line added a parlor car to the equipment of certain of its through trains, and soon the New York Central line followed suit. On the next call of the reporter the genial shop-keeper thus greeted him:

"Well, I see the Lake Erie won't allow the Pennsy to have things its own way. They tell me you have chair-cars over on your side, too. Well, that's the way it is in business, whether it's little store-keepers or big railroads—you've got to keep up with your compeeters!"

CHAPTER XXIII

The River's Main Tributaries

The two principal affluents of the Monongahela are deemed of sufficient importance to warrant more extended treatment than could be given them in the brief descriptions in the first chapter of this work. In their relative claims for attention, the Cheat is the longer and greater in its potential power and storage facilities; but the Youghiogheny has the more extended drainage area and presents much the greater possibilities for navigation through slackwater improvement. The latter also in various parts of its valley is suited to considerable aggregations of human habitation, but the former in large part runs through a rough and broken country not likely ever to be settled in populous communities.

Both rivers abound in wild and beautiful scenery, for through many miles of their extent both thread their ways through narrow passes in the mountains, densely forested. Both valleys have produced great quantities of lumber, but for the most part the regions of such production are still covered with second-growth trees, now well advanced. The valley of the Cheat in particular, in its pristine state, was a wild labyrinth of thick undergrowth beneath the greater trees, most difficult of passage. Indeed in the early years parts of it had the reputation of being practically impenetrable by humans and these were shunned by hunters who feared becoming hopelessly lost in the intricate mazes.

In its lower part the Cheat Valley is already being utilized in a notable hydro-electric improvement, in the works of the West Penn Power Company. A few miles from the mouth of the stream its waters are impounded by a great dam and backed up for about thirteen miles, forming the beautiful mountain-locked Lake Lynn. This concern serves electrical energy for much of the region which in the early days was known as the Monongahela Country.

Besides performing this useful service, the great reservoir has, during periods of great drouth in the recent years,

given practical demonstration of the feasibility of proposed government improvements of somewhat similar character in this and other affluents of the Monongahela, in their upper reaches. This was in releasing quantities of water when it was badly needed in the lower pools of the river, to keep navigation moving. More than once these releases provided the stage of water without which a fleet of steamboats could not have moved their tows of coal, necessary for the continued operation of great mills in the lower valley, employing many thousands of men.

The only improvement the Cheat has received has been in the removal of huge rocks from its bed for the better floating of logs down its channel. These impediments existed in great number and often gigantic bulk along much of its course, rendering logging operations most difficult. Some money has been expended thus by the United States Government, but private interests engaged in logging have made more important contributions to the same end.

The Youghiogheny River early engaged the attention of George Washington. In all of his journeys to the western country except one he was brought in contact with it. On his second trip when, in 1754, he led an expedition against the French, he examined its possibilities for navigation in the moving of his force. On arriving at the Great Crossing (Somerfield) Washington explored the stream down as far as the Big Falls, (Ohio Pyle) deciding that in its natural state the river was not suited to the demands that would be made on it in transporting his forces. But the idea of its navigability clung to him, and in after years he gave much attention to some means of establishing a connection by which a continuous system of transportation could be maintained in using this stream and the Potomac.

Much of the river is through mountainous country, and, like the Cheat, its bed was found to be strewn with great rocks at places, making navigation difficult but notwithstanding this fact, it witnessed a considerable flatboat traffic in the early years. It also afforded power for a number of grist mills, and, like the Monongahela at the same period, was spanned by a number of dams for this purpose, provided with facilities for allowing passage of the primitive craft of the period. There was an active

keelboat traffic on the Youghiogheny during the time when that sort of craft was in favor, and a number of such packet lines were maintained between points on the lower reaches of the stream and Pittsburgh, doing good business in passengers and freight.

But the Youghiogheny's most ambitious project in navigation was its slackwater improvement, maintained on its first twenty miles up for a number of years. Steamboats had made their way up the stream for considerable distances on various occasions of high water, but they had to retire quickly with the ebbing flood to avoid being stranded. There could be no satisfactory steam navigation of the river in any such spasmodic way, and there was demand for more dependable conditions. There was constantly growing trade from the villages along the river, and the hills facing it for many miles up were underlaid with the same Pittsburgh Seam of coal, worked to such good effect along the Monongahela.

All of this created sentiment which brought about a movement for the establishment of slackwater navigation in this river. Like the earlier movement for the improvement of the Monongahela, the project dragged along for years before it finally eventuated, about the middle of the last century, in the building of two dams, with one lock each, in the lower reaches of the river. Everts's "History of Allegheny County" gives 1851 as the year in which slackwater was established in the Youghiogheny. It was effective not much more than a decade, and in that time there was interruption more than once from broken dams. The fall of this stream is more than that of the Monongahela and this necessitated the building of dams closer together. It also subjected the dams of cribbing, after the manner of the time in construction, to greater strain in the swifter water.

Dam No. 2 in the Monongahela backed the water in the Youghiogheny up some miles, so the first dam was near to the location of the fine county bridge now connecting Versailles and Boston. The other one was at Buena Vista. This writer remembers to have seen both of the then disused locks in his boyhood. Captain Joseph L. Hendrickson, who boasted of a pilot's license for all of the navigable Monongahela and the Youghiogheny up to West Newton,

related to him his recollections of boating on the latter stream while it lasted. For much of that period a financial depression existed which made it difficult for the state-chartered company to build the works in the first place and to maintain them later. Early in the sixties the dams were considerably damaged by a flood and in 1865 a great flow of ice out of the river completed the work of their destruction and brought the end of the slackwater improvement operation in the Youghiogheny.

There have been various movements for the establishment of dams and locks again in this river. Repeated surveys have been made for the United States Government, and reports of its engineers have at different times recommended the project, while others have been discouraging in their reports. At the present time the outlook is more encouraging for successful consummation of the enterprise, and definite legislation has been enacted in its aid, with funds authorized for carrying forward its initial steps. As in other streams of the same system of rivers, the Youghiogheny is included in the Government's plans now having favorable consideration for water storage and flood control.

The coal interests of the Youghiogheny Valley are very extensive. Since the end of slackwater operation railroad shipment of this product has grown to immense proportions, and its field is reached by all the railroad systems having representation in its section. In past years its valley witnessed the greatest coke development in the world, as set forth in an earlier chapter.

Youghiogheny

Among those who penetrated its region in the early days there were nearly as many different spellings of this name as were found when the name of the stream into which it flows was considered. An early form was Yohogany, and this was changed only slightly to provide the name given to a county formed by the Virginia colonial government when it was claiming the southwestern Pennsylvania region as its own—Yohogania. The Fry & Jefferson map, published in 1751 and designated "Map of the Most Important Parts of Virginia," shows the river with the spelling, Yawyawganey. Various other spellings are

found in writings of the period, differing widely, but that which heads this article finally prevailed and is now the accepted form. The approved pronunciation of the dictionaries is Yoh-o-ga-ny, accent on the third syllable, but Yoh-o-gen-ny is sometimes heard. The popular diminutive among residents of its section is Yough (Yoh), and this has authority from very early days in the region, as witness "Forks of Yough." This was the designation applied to the strip of country lying between its lower reaches and the Monongahela, which was popular about the time of its earliest settlement and has prevailed in some measure to the present time.

The name is an Indian one and there have been some differences as to its significance. There is agreement among a number of authorities that the termination which different early writers spelled "hany," "ghany" and "hanna" means river or flowing water. Heckewelder, who was familiar with languages of tribes that inhabited the southwestern section of the present Pennsylvania, says this particular word meant winding stream. The late Dr. George P. Donehoo, former Pennsylvania State Librarian, himself an authority on Indian affairs in the state, agreed with this rendering. Dr. Frank Cowan, who delved in western Pennsylvania lore and wrote much concerning it, had a definition differing from these, but did not give his authority. He gives its meaning as "river of blood," in prefacing his poem, "The Dare-devil Yough," which will be found in the concluding chapter of this book.

The opinions of these learned gentlemen are to be given due weight, but at least mention may be made of an alleged origin of the name in a story which was current in the district when the present writer was a boy. It related that a white hunter and an Indian at the same time discovered each other on opposite sides of the river in question. It was at a time when the races were at war. They took hasty shots at each other, but without effect. They then went into hiding while reloading their pieces, the white man in a thicket and the red one behind a tree.

The Indian, by slowly disclosing something which the hunter thought to be part of his anatomy, drew fire from the latter. This was repeated two or three times, with some different manifestation on each occasion, and after

each shot the Indian would spring into view, brandishing his gun and derisively shouting:

"Yoh! Yoh! Yoh!"

He hoped at the same time to get a shot at the enemy across the stream, and tried it a few times at a venture, but always took refuge behind his tree when he thought there might be danger for him. When the white man failed to shoot at various decoys employed and there was a long time of silence, the Indian began to think that his enemy might have withdrawn or that possibly his own last shot into the thicket had found its intended mark. There was a continued long silence, and then the red man cautiously took a peep from behind his tree. As soon as his head came into view and was recognized as such, a bullet from the other side of the river went through it and a dead Indian pitched forward. The hunter's comment was:

"Mebbe you'll yoh again, eh!"



CHAPTER XXIV

The Human Product: Noted Offspring of the Monongahela Valley

Residents of the Monongahela Country, either by birth or early adoption, figure among those who have become famous in various activities. A long list could be made of those who had Pittsburgh or its environs as their home whose names have been enrolled on the scroll of fame, but only those most outstanding can be mentioned here, along with some who in a more particular way were of the Monongahela Valley.

Of Pittsburghers who made their mark in literature, Hugh Henry Brackenridge's writings had wide reading, though penned while the place was little more than a frontier post. Mrs. Jane Swisshelm was a noted writer of fiction and essays in the middle of the last century and her name lives in Swissvale. Richard Realf shone as poet and writer of polished prose a little later. In the present, Mrs. Mary Roberts Rinehart, native daughter, probably is she whose writings have had widest reading. In music, the fame of Stephen C. Foster and Ethelbert Nevin is secure, and Victor Herbert was a Pittsburgher while he was producing so large a number of compositions which live and will continue to do so. Fideles Zitterbart was a Pittsburgh composer of note and Charles W. Cadman, now living elsewhere, is in high favor today.

Samuel P. Langley demonstrated the principle of the airplane before the Wrights successfully flew their model at Kitty Hawk. John A. Brashear's contribution to astronomical science was something real and valuable. Edwin M. Stanton was a Pittsburgh attorney before he was Lincoln's Secretary of War. Whether it be for his sagacity as an industrialist in the accumulation of a colossal fortune within a few years, or his princely benefactions, Andrew Carnegie will not soon be forgotten. George Westinghouse's airbrake revolutionized railroad operation and, along with his other inventions, gave him worldwide fame.

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Henry C. Frick and H. J. Heinz were outstanding industrialists. Andrew W. Mellon has been widely acclaimed as one of the greatest Secretaries of the Treasury.

In the valley more generally, the first name to become famous and still having an honored place in history, is that of Albert Gallatin. A native of Switzerland, he turned his back on it when scarcely more than a lad. But he had acquired a fine education and had mingled with some of the great of his time, which left its impress on the youth of fine native ability. He came to America, early acquired land in the Monongahela Valley and established a town which he called New Geneva for his native city. He was soon in politics and his rise to eminence was rapid. Elected in succession to the State Legislature and both houses of Congress, he was called to be Secretary of the Treasury under Jefferson, and later represented the nation in diplomatic missions in different capitals of the Old World. His fine old home place, "Friendship Hill," with its substantial mansion of native stone and well kept grounds, all overlooking the Monongahela, is a place of great interest and beauty.

Two men of one community had their names written high in the country's roll of statesman. James G. Blaine, born in West Brownsville, of a family eminent back in Revolutionary days, made his mark in a long service in both houses of Congress, served with distinction as Secretary of State under two Presidents; the idol of millions, he missed the presidency by a hair, and due to the blundering of one man. Philander C. Knox, born in the old town across the river from Blaine's birthplace, served as a Senator from his state for five years, and in the cabinets of two Presidents as Attorney General and Secretary of State. The late eminent newspaper writer, Sir Percival Phillips, Dr. John Brashear who was mentioned in an earlier paragraph, Iowa's Senator Cummings and Alfred Griffith Hatfield ("Al G. Field"), widely known showman, were all Brownsville born.

Robert J. Burdette, born in the little town of Greensboro, attained wide fame as writer, humorist, lecturer and preacher. Samuel Frew was an attorney and editor, not widely known, but it is well attested that he demonstrated the essential principles of the electric telegraph in Elizabeth

years before Morse gave it to the world. Braddock gave training to Charles M. Schwab for his career as a great steel master, and Charleroi gave Pennsylvania a Governor in the person of John K. Tener.

Tecumseh

In all that has been written concerning the great Shawnee Indian chief named above, it is surprising to find almost complete lack of information concerning his parentage, birth and early years. And there is great disparity among those who have written concerning him as to the year of his birth, and little as to its probable place. Students of our national history are familiar with the outstanding features of his career as a man—his eloquence and the large measure of his influence over other Indians of his time, in persuading them to join in the great undertaking on which his fame chiefly rests. This was in association with his so-called brother, "The Prophet," though the weight of evidence would seem to show that they were not related.

His project, in the early years of the nineteenth century, to organize the tribes in an effort to stem and beat back the tide of white invasion of the lands they claimed as theirs, was probably the most ambitious such undertaking after Pontiac's like campaign. It failed, and the bad judgment of the Prophet contributed largely to that result; but it evinced real statesmanship and military ability, establishing the place of Tecumseh among the great of his race.

The pertinence of this subject for inclusion here lies in the fact that information at hand makes it reasonably certain that Tecumseh was a product of the Monongahela Country, born very near to one of the chief tributaries and not very far from the main stream; also that he was the child of an Indian father and a white mother who was taken as a captive when she was a child. The descriptions which have been preserved of his personal appearance give support to the fact of his being of mixed blood.

The present writer, having become aware of what is known in and about Morgantown, West Virginia, as the "Bayles Family Tradition" concerning Tecumseh, investi-

gated it, with the result of becoming convinced that it is more than a mere tradition, in the usual acceptance of the term, but establishes with reasonable certainty the origin of the noted character. As will appear below, there still live at Morgantown two brothers, one in his ninety-first year and the other two years younger, whose father was a full cousin of Tecumseh, according to the account to which reference has been made. These are Jonah and Martin Bayles, men of good repute in their community, whose memories go back to the generation in the family next before theirs, whence came their information. They have many descendants. Jonah Bayles, in particular, is vigorous and alert for one of his years. His son, G. H. Bayles, at the solicitation of the author, prepared for this work the statement which follows.*

Jesse Bayles and his wife and young children came from the vicinity of Winchester, in the Shenandoah Valley, to settle near Ice's Ferry,** in 1770. Their eldest daughter, Mary, born in 1763, was stolen by the Indians and returned years later with a two-year-old son whom she called Tecumseh. She said he was born in the Indian camp on Quarry Run, about two miles from Ice's Ferry.

Mary later, in 1782, married Anderw Ice, but kept Tecumseh with her until he was fourteen years of age. He then went to join his father's people, and gradually came to be a great chief. He often visited his home during these years, where he was considered one of the family, and was always on the friendliest terms with his mother's people and their neighbors. The night before the battle in which he lost his life, he and his two half-brothers, Jesse and John (?), soldiers in the American army, sat on the trunk of a fallen tree and visited for some time.

That is the story as we have it. Since Mary was born in 1763 and married Andrew Ice in 1782, it seems most likely that Tecumseh was born in 1779 or 1780, a date which corresponds closely enough with estimates of his age by competent observers. My father's uncle, John Bayles, born in 1801, Tecumseh's first cousin, remembered

* In June, 1937, as the manuscript of this book is undergoing final revision for publication, the following information comes from John C. Bayles, of Morgantown: "Jonah Bayles was born March 31, 1843, died November 16, 1935, aged 92. Martin Bayles (my father) was born July 10, 1846; still living but very feeble in mind and body; should he live until July 10 of this year, will complete his 91st year."

** Ice's Ferry was where the road from Morgantown to Uniontown, via Fairchance, crosses by a bridge over the Cheat River, now a part of the artificial Lake Lynn, seven miles from Morgantown. It was at this spot that the little girl was captured and carried off, according to the account as it came down in the Bayles family. The children were playing along the river shore when one of their number was taken.

him well, and often told my father stories about him. My hazy recollection is he told me these tales, but I was only fourteen when he died, and did not pay sufficient attention to be sure. But a very early recollection is of my father telling us one day, as we went up Quarry Run, that Tecumseh was born right in that neighborhood.

A more recent confirmation of the story came about through a visit of my father to Buffalo, New York, in 1905. One day, with others, he visited an Indian reservation near that city. An old Indian, who said he belonged to the Salamanca tribe, when he learned my father came from Morgantown, told him his great-grandmother came from near there and was a white captive girl named Jameson. (He called it Jimmeson, a common pronunciation here.) When my father told him his name, he said his great-grandfather's closest friend had a white captive girl wife named Bayles and their son was the great chief, Tecumseh.

This Indian said Tecumseh was born in the Indian camp under the rock ledges, on the ridge between the forks of Quarry Run, about half a mile from the fork, and described it as a place where huge fragments of rock projected from the hillsides and some extended out above ground, forming shelter for a camp. He said he had never been in this country, but gave reasonably close description of a trail crossing the Monongahela at Point Marion, crossing the Cheat a little higher up, on to and past the camp site and across the mountains.

One Sunday, late in October of this year, (1933) my father, brother, two sisters and I went over Cheat and drove up the mountain road to Quarry Run. We never had seen the rocks described by the Salamanca Indian, though such outcrops of rocks are not uncommon near there. My brother and I followed an old road down along near the southeast side of the run until we nearly reached the forks. My father being past ninety and the woods being a burnt-over forest and full of brush, we left him and my sisters behind. We found many overhanging ledges large enough to shelter many people each. Being down in a low hollow, it is an ideal site for a camp. The run near by on each side provides plenty of water.

There was a murder case in Western New York some four years ago in which an Indian woman named Jimmeson was mentioned. It is interesting, in remembering the Indian's story that his great-grandmother was a Jimmeson (Jameson), to remember also that the Indians usually carried the mother's name on as the family name.

All of this seems fairly convincing proof that Tecumseh was a product of the Monongahela Country of old. A paragraph added by Mr. Bayles gives so vivid a picture of a period covered somewhat in earlier chapters of this work that it is added:

Accounts at the time of the turn of the century—1780 to 1813—are filled with stories of hope and despair, gaiety and horror, tragedy and farce, happy celebrations and dogged trailings of savage marauders, the discovery of the mutilated forms of white women and chil-

dren along the trail or in the homes, and the terrible revenge of their menfolks. It was among such conditions that Tecumseh was born and lived and died, and which his firm character and powerful authority did much to ameliorate.

In connection with this account of the birth and childhood of the great chief, there has recently come to hand interesting information concerning his probable last resting place. This is in an Associated Press dispatch from Sarnia, Ontario, clipped from a newspaper of about the year 1934. It reads as follows:

Echoes of a century and more ago, when supremacy of the Ohio Valley hung in the balance between Indians and whites, were stirred today by announcement that bones believed to be those of the Indian warrior Tecumseh have been found on Walpole Island. Tecumseh, whose ambitious scheme for a far-flung confederacy to drive out the white settlers manifested itself in a series of outrages which kept the border ablaze, was slain in combat on October 5, 1813. He had been made a brigadier general by the British in the War of 1812. He was killed in battle along the Thames River, Ontario.

The remains were found a week ago in the home of Sarah White, 85-year-old widow of a former chief. The Walpole Island Soldiers Club took charge of them and instituted inquiries which resulted in the conclusion that the bones were those of the noted Indian chief. Norman S. Gurd, of Sarnia, author of "The Story of Tecumseh," said there was a strong possibility the bones were the Indian warrior's. He said his researches had uncovered facts that tallied with bits of legend about Tecumseh, preserved among the Walpole Island Indians.

At the outbreak of the War of 1812 Tecumseh entered the British army and led skirmishes at the siege of Detroit and Fort Meigs. He egged on the timid British commander to attack William Henry Harrison's American army at Thames River and died fighting the enemy.

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CHAPTER XXV

River and Region in Later Days

This book has largely been written during the prevalence of the most serious financial and industrial depression this nation has ever known. The region of which it treats has shared in all the typical experiences of this visitation. But as the book is being brought towards its end there are seen on the horizon of gloom some glimmerings which give promise of the dawn of a new and better day. A faithful picture of the Monongahela River and its region at this time would not be a fair one, as indicating the measure of attainment in the things of its industry and commerce. So, in the matter of figures at least, normalcy will be indicated by giving some description of the region just before the paralysis of industry and trade which followed the financial break. The Pittsburgh Chamber of Commerce has given valuable aid in assembling figures and statements of fact presented in this chapter. Others are from the census reports, government records of river traffic and other sources equally reliable. Figures are proverbially dry reading, but only with figures can the impressive showing which is that of the Monongahela and its region be presented.

The river for the last twenty-five miles of its flow is in Allegheny County. Although in many different municipal units, this stretch is practically one city—a continuation of Pittsburgh in effect, and seriously proposed to be made, with other outlying sections, into one metropolis. Proceeding along the river, as one ascends it from Pittsburgh, this alternation is found:

On the right, the Homestead group—Homestead, West Homestead, Munhall and Whitaker; on the left the Braddock group—Braddock, Rankin and North Braddock; then, to the right, Duquesne; next, on the left, McKeesport; following, right, Dravosburg; left, Glassport; right, Clairton; left, Elizabeth; right, West Elizabeth, and soon the county line. The Turtle Creek valley, just above Braddock, has,

closely clustered, Turtle Creek, East Pittsburgh, Wilmerding, East McKeesport, Pitcairn, Trafford. All of the places above mentioned are mill towns, constituting a veritable hive of industry in Pittsburgh's overflow.

The portion of the river above outlined also constitutes its first two pools, in the scheme of its slackwater improvement. In the third and fourth pools, carrying navigation to Brownsville, are old places which played important parts in the successive stages of the valley's history, as has been noted: Monongahela, Webster, Belle Vernon, Fayette City, Coal Center, California and the Brownsville group—all busy, prosperous and growing. But others there are of more recent growth in the development of manufacturing in the district. Young giants among these are Charleroi, Monessen and Donora, with Roscoe, Allenport and Newell also having importance in this regard, and various mining settlements.

In the pools above, within Pennsylvania, the chief activity of recent years has been the development of coal production, which has brought various prosperous mining settlements into being, with the older towns also, for the most part, taking on new life. Point Marion, Millsboro, Rice's Landing, New Geneva and Greensboro are old river towns and another, Masontown, has had marked growth in recent years. Thriving and growing cities on the main stream in West Virginia are Morgantown and Fairmont, the latter being at the head of slackwater improvement.

The early years of the present century saw the end of wooden construction in river craft, and the passing of an important industry in the first four pools of the river. Steel has wholly supplanted wood in the construction of both steamers and cargo containers. This industry has centered in a few great establishments at Pittsburgh and along the Ohio River for a few miles below its source. In recent years the output in this particular has been very great, and, as in the old days of wooden construction, boats have been built not only for the local streams, but for the whole western system of rivers and even for those of other nations. Some marine railways and repair yards remain along the Monongahela, but they are for the upkeep of craft of their owners, rather than for the trade at large.

During the World War many steel ships were fabricated in and about Pittsburgh and erected on the Atlantic Coast, and in the same manner steamers for Pacific Coast, Mexican and Central and South American rivers are built from time to time. Figures for a recent year show the turning out from these yards of eight large towing steamers, valued at \$2,000,000, and 300 barges, at \$6,000,000. Sixty thousand tons of steel went into the construction of the barges, with an average cost of \$15,000. One of them will carry 1,000 tons of coal, the equivalent of 25 carloads.

Mining and shipping of coal by river, once an industry of marvelous extent and activity in the lower pools of the river, have wholly ceased along the first and second pools, and practically so along the third pool, but four mines remaining there. The fourth pool has nine mines, all shipping by water and most of them by rail also. Some of these are very extensive concerns. The fourth, fifth, sixth and seventh pools are the ones where the great coal industry of the valley now centers, as contributing to shipment by water.* About forty mines are there, and they are extensive, modern in equipment and employ great numbers of men in normal times. More than half of them are owned by a few concerns whose whole product goes into steel making in the Pittsburgh District.

That is one of the great changes that have come to the mining and shipping of coal in this valley in recent years. When the coal was being worked out of the lower valley the amount of the product consigned to Pittsburgh was negligible. The great bulk of it went to the markets of the lower Ohio and the Mississippi. More than half a hundred concerns were engaged in the business. Now the great bulk of it is handled by four shipping concerns, and much the greater part of it is converted into coke before it goes into the processes of steel making.

But the amount produced and moved is greater than ever before, and the result is the Monongahela witnesses in normal times the greatest shipping activity in its history. The old passenger packet is gone, but the towboat

* There are extensive coal mining operations higher up in the river valley, in West Virginia, but the product is shipped by rail from there.

has come into its own. It is largely this coal movement which gives this comparatively small river the vast tonnage—29,000,000 tons in normal years, which brings it to an approximation of the traffic through the Panama Canal, a world highway, with an annual average of 30,000,000 tons. But one other waterway in the Western Hemisphere exceeds these figures in cargo traffic—the Detroit River—bottle-neck of the vast commerce of the Great Lakes.

The towboats employed in this traffic are capable of handling up to 10,000 tons in a tow, 2,000 pounds to the ton. But ordinarily the tow consists of six barges, (6,000 tons) this being found most convenient to handle in passage of the locks. In normal times, in the Pittsburgh District, 30,000 tons of coal are used daily in the production of coke.

Figures are available showing the freight tonnage on the Monongahela for 1929, which may fairly be taken as the last normal year. These were: Coal 23,182,128, coke 1,326,667, cement 47,510, sand and gravel 2,235,245, stone 21,173, iron and steel 1,602,991, oil and gasoline 21,840, logs and lumber 10,957, packet freight 42,954, other commodities 416,149; total 2,907,614 tons.

The United States Department of Commerce has designated the Counties of Allegheny, Beaver, Washington and Westmoreland as the Pittsburgh Industrial District, and gives these figures for it in the year 1929: Number of industrial establishments, 2,587, salaried officers and employees 33,050, salaries \$87,726,512, number of wage earners 227,221, wages \$357,075,488, average \$1,571, value of products \$2,015,399,034.

Here are some facts in a bird's-eye view of the Pittsburgh District: It has the world's only manufactory of forged steel sheets, the world's largest food packing plant, the world's greatest cork products manufacturing plant, the world's largest manufacturers of rolls, aluminum, air-brakes, plate glass, window glass, refractories, plumbing fixtures, rolling mill machinery; the world's second largest independent steel company and second largest electrical equipment company; America's largest independent oil company, commercial coal company, wrought iron pipe company, manufacturer of bolts, nuts and rivets. The assets of thirty-nine leading industries make a total of \$2,413,131,521.

A study made by officials of the Mellon Institute of Industrial Research and the Pittsburgh Chamber of Commerce in the year 1927 brought the following statement, which well sets forth conditions in normal times:

Pittsburgh's industrial district—the area within a 30-mile radius of the city—produces nearly 25 per cent of the country's iron and steel. The yearly output of mills, blast furnaces and foundries amounts to more than \$750,000,000. More than 100,000 men are employed in Pittsburgh's steel mills. The production of pig iron gives employment to more than 7,000 persons, who are paid \$13,500,000 annually. The annual output is 8,500,000 gross tons, which is more than one-fifth of the production of the country. A capital investment of \$130,000,000 is represented by the 57 blast furnaces in the Pittsburgh district. Each year they consume 28,500,000 tons of iron ore from other districts—21 percent of the ore mined in the United States—almost 9,000,000 tons of coke, made in the Pittsburgh district.

The total output of the glass industry in the Pittsburgh industrial district is valued at \$50,000,000, and more than 12,500 workmen are paid \$17,000,000 annually. The district ranks high in the production of ceramic goods. The bulk of ordinary and special brick production in Western Pennsylvania has an annual value of \$15,648,000. With other products manufactured from fire-clay, this gives the total output of ceramic products at about \$20,000,000 a year. The value of electrical equipment manufactured in the district exceeds \$20,000,000 annually.

There are more than 300 lines of manufacture in and about Pittsburgh. Iron and steel are manufactured in 51 communities of the industrial district, glass products in 28, clay products in 16, chemicals in 14, machinery and tools in 12, enameled ware in 11, non-ferrous metals in 9, railroad equipment in 8, tin plate in 7, electrical equipment in 5, paint and varnish in 4.

The Monongahela River was the first waterway in the United States the improvement of which by the Federal Government was completed and operated along the whole course of the main stream. This was accomplished at a cost of \$16,000,000. Its cost of maintenance and operation is about \$900,000 a year. It has been figured that a saving of 94 cents per ton over rail rates is effected in shipping thus, or about \$27,000,000 on a normal year's traffic. Statement has been made by a competent authority that "the improvement of the stream has paid for itself and earned a surplus of about \$100,000,000, returned to the general wealth of the nation through reduced transportation costs. Five percent interest on the investment would amount to \$800,000. This, after paying the cost of the operation and maintenance and interest to the government

on the investment, the shippers would still save nearly twice as much as the total cost of the improvement.”*

In recent years canalization of the Ohio has been completed, with a nine-foot channel in its whole course from Pittsburgh to Cairo. Work on the improvement of the Allegheny is proceeding steadily, and much of it has been completed. All of these are Federal Government projects.

The project of linking the waters of the Ohio Basin with those of the Great Lakes has long been urged and has many strong advocates today. The route for this first to suggest itself was that followed by the French in their early expeditions from Canada—by way of French Creek and the Allegheny River—and this still has its supporters. But a route to follow the Beaver and Mahoning Rivers from the Ohio has gained more favor in the later years, and has a strong and continuing organization to support and urge it. Either would require, in addition to the improvement of the natural waterways, the construction of a canal and storage of water on the intervening watershed for its operation.

The second of the projects above referred to is very much in the public view at this time. Government engineers have investigated and reported on it from various angles. It is strongly urged that it would be of much benefit to the entire region affected, and greatly stimulate commerce on the Monongahela, Allegheny and upper Ohio. Sentiment in its favor has been growing through the years, as expressed in official circles, commercial organizations and the press.

Now, as this is being written, official announcement is made that the United States Army Board of Engineers has given its endorsement to that part of the project calling for improvement of the rivers involved. This includes 35 miles of the Beaver and Mahoning, from the Ohio to Youngstown, Ohio. Application will be made to the Public Works Administration for funds with which to finance the work.**

* Cleveland A. Newton, general counsel of the Mississippi Valley Association.

** Since the above was written proponents of the Allegheny River-French Creek route have redoubled their efforts to get further consideration of their project.

Another project affecting the Western Pennsylvania rivers which is now receiving much attention is that which aims at flood control, conservation of water for making the streams more effective for navigation in times of drouth and the generation of power. An organization known as the Pittsburgh Flood Commission has long had this project under consideration. Floods periodically cause damage and loss in the amount of millions of dollars. In 1927, when the Mississippi flood disaster was claiming national attention, this commission sent a memorial to President Coolidge in which it was declared that the time had come when flood problems should be attacked by the national government in a broad and comprehensive way.

It was stressed that levees had proven inadequate and that by-passes could not afford all the relief necessary in time of a great flood, but in addition to these there should be control of water at the sources of the streams, for holding back part of the flow in time of freshet and its freeing for the aid of navigation in periods of drouth. As result of these matters being so forcibly brought to the attention of Congress at that time, the National Flood Control act was passed in 1928, which led to a searching investigation of the whole problem by United States Army engineers. They endorsed the course proposed by the Pittsburgh Flood Commission and recommended construction of eight great reservoirs and various storage basins in the headwaters of the Monongahela and Allegheny Rivers, as part of the procedure for meeting the needs of the Ohio Basin in this particular.

Those for the Monongahela would be in the Tygart's Valley Branch, the West Fork and the upper Youghioheny; for the Allegheny in the upper reaches of the main stream, the Clarion and Conemaugh Rivers and French Creek. Committees in half a hundred cities and towns in the three states affected have strongly urged government action in putting the project in operation, in connection with the National Recovery program. The plans call for the advancement of money by the Public Works Administration, the work to provide employment for large numbers of men who would otherwise be idle and use of vast quantities of material, machinery and tools, thus stimulating business in various lines. The estimated cost of the

proposed improvements is around \$50,000,000. Only one of the projects going to make up the whole plan for flood control of the Ohio Basin has had official approval necessary to start the actual work on it. Allotment was made of \$3,000,000 for the building of a flood control and stream regulation reservoir in the Tygart's Valley Branch of the Monongahela, two miles above Grafton, West Virginia. As this book is being made ready for the printers that work is nearing completion, and the recent disastrous Ohio River flood has given further emphasis to the urgent need of putting the entire plan through as promptly as possible.*

It is interesting to observe that after the vast tonnage of coal from the Monongahela had passed down the Ohio, through the years, with the handicaps of a stream largely unimproved, complete canalization of that river has come, with ample water at all seasons, when that traffic largely has ceased. But steel shipments, largely originating along the Monongahela, have taken coal's place in some measure, and the future holds promise of great gains in the shipment of steel and other products. On the Monongahela complete modern slackwater improvement came after the former great host of coal shippers had passed from the scene.

This chapter has attempted to set forth the status of the river and its region as they are when work on this book reaches its end. What of the future? Everything that has gone before and the existing possibilities argue that there will be yet greater things in this favored region, and that it will continue to play its important part as the destiny of a great nation is worked out.

Calking

The operation of calking, daily seen and heard along the Monongahela for more than a century, has practically ceased with the passing of wooden-built craft. The operation consists of driving oakum into the seams between planks, to aid in prevention of leaking. The peculiar clink-

* Still later, Congress, in the last weeks of its 1937 session, has made provision for the beginning of work on three such dams to be built in tributaries of the Allegheny River, and work has been begun on two of them in Tionesta and Crooked Creeks.

ing sound of the operation is unlike anything else, and once heard could hardly be forgotten. When many were thus engaged at once it made a symphony of industry impossible of description. If heard elsewhere, it would undoubtedly bring to the native of the valley thoughts of the old river and its activities. When the stream was lined for many miles with yards and docks, engaged in the building and repairing of vessels, there were few times in working hours when the peculiar clinkety-clink of the mallet on the calking iron could not be heard. About the only times off were in most inclement weather, when the calkers would gather in the oakum-shed to spin the material into the loose ropes necessary for handling, and at the same time spin yarns around the old stove.

The calking iron is a chisel-like tool, with broad, rounded and channeled face, and the calker is very particular that his tool is just right in every respect. Held in the left hand, it is manipulated along with the index finger, in bringing the loose oakum rope over the seam. It is driven by the wooden calking mallet, also peculiar to this particular use, with its round metal-ringed poll nearly as long as the handle. In deck calking cotton is often used, along with the oakum, the seams then being filled with hot pitch. Vessels of riveted or fused steel structures do not require these operations. Are the calkers, like the old-time coal-boatmen, to become an extinct species?

The "Wheeling"

A curious reminder of the early rivalry between Pittsburgh and Wheeling remains. This rivalry developed into an antagonism which often had pronounced expression among boatmen of the two cities, and sometimes led to personal encounters when they mingled at popular gathering places. It is related that when the fine passenger packet, Valley Forge, was completed at Pittsburgh in 1842, it made a trial run to Wheeling. As an innovation, the state-rooms and compartments on the boat were given the names of different cities and towns along the Ohio.

When the boat arrived at the Wheeling wharf a delegation of men of the city came on board to inspect the new craft. They were greatly pleased with the idea of naming

the compartments for places, and asked the captain to be shown the one named for their city. They were escorted to the aft end of the boat and shown the little room usually having on its door the designation, "Men." Instead, in this case, across its door, in gold letters was the name, "Wheeling." For a moment the visitors were stunned. Then the enormity of the insult to their city was borne in on them. Their civic pride was outraged, and with wild whoops they began ripping the offending door from its hinges.

The crew was called and the visitors were unceremoniously dumped on the wharf, whence they disappeared uptown where they soon rounded up a strong body of reinforcements. The party rushed to the waterfront, vowing they would burn the Valley Forge. But the lines had been cast off and the boat was safe in mid-stream on their arrival. The offending word was removed before the boat again ventured to return to the place, but to this day boatmen on the local rivers refer to the men's room as the "Wheeling."



CHAPTER XXVI

The River in Story and Song

Various contributions have been made to literature with the Monongahela and its region as their theme. In fiction, as far as can be learned, the earliest work was "The Wilderness," written by Dr. James McHenry, of Philadelphia, and published first in 1823. It was reprinted in 1848 and again in 1876. A few years thereafter a book appeared with another person claiming to be the author, and under the title of "The Rose of the Wilderness." It proved to be the same story, with only change of name.

The story, a highly melodramatic tale told in stilted language, dealt with the coming of the first white people into the valley of the Monongahela, and was built around the historical fact of John Frazer's cabin being established near the mouth of Turtle Creek. In the book he was called Gilbert Frazier. The family was represented to have been captured by the Indians in the Juniata Valley and carried to the Monongahela. A French officer rescued them. His wife's death left a new-born girl baby who, with her father's consent, was adopted into the Frazier family, and the father soon disappeared from the scene.

The child was known as Maria Frazier, grew up, became very beautiful and charming, and was highly educated under the tutelage of a mysterious Indian prophet, Tonnaleuka, who makes surprising revelations in the denouement of the closing chapter. When the youthful George Washington arrived on the scene, he fell deeply in love with the maiden, but another young man, Charles Adderly, of Philadelphia, who had penetrated the wilderness on a mission of business, had already engaged her affection.

Indian chiefs, the dusky Queen Aliquippa and various French officers, whose names figure in the history of the time and region, are introduced in the story. There are many exciting adventures, with perils for all, the action including the battle of Fort Necessity and Braddock's de-

feat, the latter near the Frazier home. De Villiers, the French commandant at Fort Duquesne, pays suit to the fair Maria, but in vain. He then captures and carries her off, but she is rescued by Washington who, a few days later, arrives with a force of mounted troopers just in the nick of time to save Maria's lover in the moment in which he was to be burned at the stake by vengeful Indians. Washington, with fine abnegation, yields the heroine to the arms of her beloved, and all ends well!

"The White Rocks" is a story of the Fayette County mountains and the valley of the upper Monongahela. The title and climactic event of the story came from a tragedy in real life in which a young woman was wronged and then killed by the young man who pretended to be her lover, by throwing her over a mountain cliff, still a well known landmark. In the story he was the secret leader of a band of robbers whose lair was a cave in the hillside overlooking the river. Delaney's Cave, long one of the interesting places of the neighborhood, is made the scene of one exciting episode. The story was written by Ashbel Fairchild's Hill, a Fayette county author and journalist. It was first published in 1865, was reprinted in 1900 and again in 1925.

"Sim Greene and Tom the Tinker's Men" is a story of the Whisky Insurrection, and aims to give the essential facts of that uprising and at the same time a picture of the region in that period, the people and their customs. To relieve it of what some might deem the tedium of dry history, a romance is woven in with the facts set forth, with adventure, strife, misunderstandings and love having their parts in the lives of those figuring prominently in the story. Its scene is appropriately laid largely in the Monongahela Valley and near by, where developed the historical events which supply the motif. It was written by the author of this work, was first published in 1906 and has been reprinted twice.

"The Latimers," by Rev. Henry C. McCook, and "The Freighter," by Dr. Andrew Lyle Russell, are two other novels based on the Whisky Insurrection, the first published in 1898 and reprinted in 1929; the latter issued in 1919. Both are well written stories, told with maintained interest, and detail the chief events of the Insurrection. Dr. McCook's effort is somewhat labored in bringing in a host

of Scotch-Irish dialectic expressions. Dr. Russell argues strongly for the righteousness of the cause of the insurgents, and puts George Washington and Alexander Hamilton in very unfavorable light.

Rev. Joseph Doddridge was one of the earliest writers of the history of Southwestern Pennsylvania. His book with a long title, the essential part of which is "Notes of Settlement in the Western Country," was first issued in 1824. It is usually referred to as "Doddridge's Notes," and is a rich store of information of the doings, manners and customs of the early days in the region of which it treats. It was reprinted in 1876 and again in 1912.

"Old Redstone" is the name of a work by Rev. Joseph Smith, which sets forth the organizing of the Presbyterian Church in Southwestern Pennsylvania and its early history. But at the same time it contains much interesting matter concerning the region, not essential parts of the church history. The work was published in 1854. Its author's field of ministerial work was in the Monongahela Valley.

"The Monongahela of Old" is Judge James Veech's contribution to the history of the region. It pertains largely to doings and developments in Fayette County, but follows these in their implications into various other fields. It is a scholarly and most interesting work which was written and published in a small way, first for private distribution in 1858, had more general circulation in 1892, and was reprinted in 1910.

Edgar W. Hassler, a Pittsburgh journalist, wrote and published "Old Westmoreland" in 1900. Its sub-title is "A History of Western Pennsylvania During the Revolution," and, as in that time Westmoreland County included most of Southwestern Pennsylvania, the main title is entirely appropriate as a history of the whole region in that period. It is a most valuable contribution to the history of the region in that time.

"Monongahela, Old and New" was the name given by Dr. John S. VanVoorhis, who was a lifelong resident of the Monongahela Valley, to a book issued by him in 1893. It consists of a large number of short sketches of persons, places, events and early customs of people of the valley, and preserves much of interest that would otherwise doubtless have been lost.

Alfred Griffith Hatfield, the "Al G. Field" of the minstrel world, wrote a book which he called "Watch Yourself Go By," and it was published a number of years ago. It is autobiographical and is largely made up of accounts of his experiences and pranks as a boy, growing up in Brownsville.

"The Whisky Insurrection, a General View" is a small work which essays to cover the outbreak of which it treats, with conditions and developments brought about by it. It was prepared by request of the Washington County Historical Society, under the presidency of Boyd Crumrine, and read before that body in 1908. It came out in book form in 1912. It contains much concerning the first armed rebellion against the authority of the Republic not theretofore published in tracing its causes, and in the movements of the army sent for its suppression. It is a product of the author of this work, and is now practically out of print.

The books listed in the foregoing paragraphs treat largely of the region which was widely known in the early days as the Monongahela Country. But the Monongahela River has figured somewhat in verse as well as in prose. The earliest tribute in rhyme that has been found was in McHenry's story, "The Wilderness," referred to in earlier paragraphs of this chapter. The hero of the tale is represented as seated on the edge of the river and thinking of his beloved Maria. The author tells us that "in such a situation, when impressed with such feelings, a romantic mind can hardly refrain from becoming poetical." So it is told that he drew out his memorandum book and pencil and indited the following lines, addressed to the Monongahela:

Fair stream! though deep in forest glooms
Thou roll'st thy Indian-haunted tide;
Upon thy bank a maiden blooms,
The gem of nature, virtue's pride!
Let others choose the joys supplied
By art, on Thames' or Liffey's shore.
Give me upon thy sylvan side
With her to live—I ask no more.

Fair stream! though never poet's lay
Hath bade the world thy name revere;
Though history's page refrains to say
What heroes fought and conquered here—
Than Tweed's or Tiber's banks more dear,
Is thy unchartered shore to me;
And warm'd to rapture more sincere,
I worship charms possessed by thee!

For in seclusion's peaceful shade,
Fair nature oft delights to show
Some flower or gem or beauteous maid,
Too lovely for the world to know.
Thus woodland roses often blow,
To bless with sweets the desert wild,
And thus from thee my raptures flow,
Maria, nature's fairest child!

Another poetic offering to the stream was that given below. Its author's modesty led to anonymity, under the pen-name of "Wanderer," but he was identified as Daniel O'Connell Lambert, well known along the valley in his day. His verses appeared in a little newspaper, the "Elizabeth Advertiser," in its issue of December 23, 1871. The ode is too long to reproduce entire here, but some characteristic stanzas follow:

The Islandless River

Forth out of Virginia a river doth flow,
The fairest the sun shone on ever;
It's short and it's narrow, its current is slow,
It's the one only Islandless River.

It gives to the country great mineral wealth,
Its people are honest and clever;
No place on the planet can boast of such health
As the vale of the Islandless River.

Far under the surface of this favored land
A treasure was hid by the Giver,
Which, due to his might and the genius of man,
Flashes light from the Islandless River.*

The people that dwell in the North, South and West
Look to this beneficent Giver,
With thanks for the light and the fuel—the best;
They are sent from the Islandless River.

* Monongahela Valley coal long held first place in the making of illuminating gas.

The farmers out West and the planters down South
Bring fruits of the soil and deliver
To steamers well built from far up, to the mouth,
Of this beautiful Islandless River.

At the mouth of a creek, as he neared Fort Duquesne,
Brave Braddock, by dart from a quiver,
While fighting the hordes of the red men, was slain
On the bank of the Islandless River.*

Our dear Uncle Samuel to us is e'er kind—
To us he plays not the deceiver;
His watch-chain's the stream that we love, and you'll find
It's the stream called the Islandless River.

Around every link jetty diamonds are set,
None richer by monarch worn ever;
Each one as a town or a hamlet is met
On the banks of the Islandless River.

Let kings of the nations boast loud of their crowns,
From toil of the poor humble liver,
While Uncle Sam jingles his jewels, the towns
On his beautiful Islandless River.

O Monongahela, the red Indian brave
Once sought, with the bow and the quiver,
Wild game by the margins thy waters still lave,
Thou peerless old Islandless River!

Frank Cowan, of Greensburg, Pennsylvania, journalist, poet, student of local history and world traveler, wrote and in 1876 published a volume entitled "Southwestern Pennsylvania in Song and Story." It contained a large number of articles, many of them in verse, treating of various matters within the region included in his title. He was the son of Edgar Cowan, who was born in the valley of the Monongahela and long represented Pennsylvania in the United States Senate. Two of the younger Cowan's poems are given as the next two, with the introductory paragraphs supplied by the poet. In the first he seems to have been describing his own mood as much as the river.

* Was 'Squire Lambert not informed that Braddock died of a gunshot wound, or did he sacrifice exactness of statement to get a needed rhyme?

Monongahela

The word Monongahela is said to signify in some of the Indian languages the Falling-in-banks. It is the type of the melancholic—the “darkened blood” of the song, as the Dare-devil Yough is the type of the impetuous and determined. The poet in the following lines is supposed to be standing on the bank of the river.

Monongahela's muddy bank,
When mirrored in its murky flood,
Is not as sombre, dull and blank
As shades that cross my darkened blood!
Ah, woe the day when living love,
Incarnate sunshine, warmth and light,
As image without light should prove
The phantom of a dream at night.

The sun is set; the sky o'ercast
With heavy clouds, hung low and black;
Monongahela's of the past,
Engulfed within the storm and rack!
But deepest night and darkest storm,
Their gloom combined, cannot efface
The faintest image of her form,
Reflected in a conscious glass!

The storm is o'er; the clouds are riven;
The stars, rejoicing, glint and gleam;
I see them in this second heaven,
Monongahela's murky stream.
But in the mirror of my mind
No rays of hope and joy are shed;
The blue eyes of the shade are blind—
The shade's the image of the dead!

The Dare-devil Yough

The Yough is the familiar abbreviation of the Youghiogheny—an aspirated Ohio-gheny, signifying the River of Blood.

Where the bluff Alleghenies rise rugged and rough,
And fetters and bars for a continent forge,
There dashes defiant the Dare-devil Yough,
Through rocky ravine, deep dell and grim gorge!
To this river I drink; for akin to my blood
Is this torrent so bold, and so buoyant and free,
Braving boulder and crag with impetuous flood,
As onward, resistless, it rolls to the sea.

And here's to the man with a will like the Yough—*

A will that would wield as a weapon the world,
Daring all and defying ev'n death with a scoff,
When over the brink of decision he's hurled!
'Tis the man that I love, the cold and the brave,
Converging his might to the channel of aim;
From the mountain of life to the gulf of the grave,
Rolling on like the Yough to the ocean of fame.

An here's to the woman, afloat with the tide

That bursts from the mountain-heights' fountain of love,
On whose billow the barks of futurity glide,
Until anchored in bliss in eternity's cove!
'Tis the woman I love; and the free bounding wave
That breaks in the course of my hot throbbing blood
Is the might of the love in return that she gave,—
A might that's akin to the Yough's rushing flood!

Another poem in the same collection is "The Spectre Ship of Fort Pitt." It is a weird tale, timed in the period of ship building on the Monongahela, at the beginning of the nineteenth century, and is of great length. The author introduces it with this observation: "One of the most curious pages in the history of Southwestern Pennsylvania is that which relates to the construction, at Pittsburgh and Elizabethtown, of ocean vessels—galleys, schooners and brigs of from two to six hundred tons burden." A single stanza of this offering will have to suffice here:

The keel of a stately ship was laid
In the Port of Pitt in glee—
In the ebbing flood of the River of Blood,
Two thousand miles from the sea!

The verses which follow were found in a scrap-book. From what publication the poem was taken is not known, nor anything more of the author than the name attached. Its sentiment is to be commended and the dialect is cheery and neighborly. But it must be remarked that persons who have been looking on the river for many years have never noticed that under any conditions remembered it had the hue here assigned to it. Ordinarily it is a muddy yellow; sometimes in the drouth of summer a greenish cast is apparent but who ever saw it blue? However, in

* "The Dare-devil Yough" was dedicated to Henry Clay Frick, noted local industrialist.

view of the other excellencies, this may be allowed on the score of poetic license.

Where the Blue Monongahela Flows

By P. D. Gog

The hills are purple-like an' sort o' hazy,
An' life is kinder leisurely an' lazy
Where the blue Monongahela flows.

The breezes venture forth in languid sallies,
To kiss the daisies in the sleepin' valleys
Where the blue Monongahela flows.

The sun is jest a little late in risin',
But goes down with a glory most surprisin'
Where the blue Monongahela flows.

The bond of friendship's jest a trifle tighter,
The hearts of men are jest a wee bit lighter
Where the blue Monongahela flows.

Somehow there's less of bullyin' an' shovin'
An' more of kindness an' hope an' lovin'
Where the blue Monongahela flows.

An' so I reckon if the choice were given,
I'd stake my claim an' spend my life a livin'
Where the blue Monongahela flows.

The following lines comprise the first attempt at versification by the author of this book on any subject. Written in callow youth, the work should be judged by its standards. It was an expression of love for the stream familiar to him from his earliest memory. More than half a century later the lines are given here again in the same spirit, as this volume nears its end. They were published in the "Elizabeth Herald" in its issue of August 1, 1879:

Monongahela River

From West Virginia's wooded hills,
Through Pennsylvania's vales,
Receiving crystal springs and rills
From shady sylvan dales,—
Adown the valley sweeps a stream,
Resistless, onward ever,
Broad current of my song the theme:
Monongahela River.

I love to watch thy golden tide
 Reflect the sun's bright rays,
 Or, onward to the ocean glide,
 In evening's dark'ning haze;
 To hear the rippling wavelets dash
 Upon the pebbled shore,
 And watch the liquid diamonds flash
 From boatman's dripping oar.

Melodious title, given thee
 By native Indian race;
 In song, in tale, in history
 It has an honored place.
 Monongahela—euphony
 Is in the word expressed—
 Accept another name from me:
 The Hudson of the West!

And now a final tribute, the latest thing written for this book as the pages are being given final revision to shape them for publication. In the nature of an after-thought, it attempts to epitomize the story of the river and its region in metered and rhymed verse:

Monongahela's Story

Monongahela's tawny flowing tide
 Goes surging, to be lost within the sea.
 'Tis so the days, the months, the seasons glide
 Into the ocean of eternity.

Lo! here is mystery—'tis passing queer!
 Each with us stays, though ever speeding on,—
 Time and the stream are always with us here,
 But that of now is soon forever gone.

Old river of my youth, my passing years,
 Thy story is as wondrous as thy ways:
 It claims attention of the one who hears
 The record of thy long and countless days.

Who built the mounds along thy crumbling bank?
 Who carved his records on the enduring stone?
 Who flourished for a time, then, nameless, sank
 Into oblivion's dark and silent zone?

The red man built his wigwam by the stream;
 He wooed and to it led his dusky bride;
 He launched, and sent the rippling waves agleam,
 As his canoe went skimming o'er the tide.

Then came the paler man upon the scene;
His axe the giants of the forest felled,
And soon his home was there, though poor and mean,—
Possession of the soil he won and held.

But not without a struggle was it won,
For red man and the one of Gallic race
Their might opposed, with scalping knife and gun,
And battled for possession of the place.

'Twas here young Washington saw first of war,
Here Braddock, brave but haughty, fought and fell;
Here Forbes the Frenchmen routed, drove afar,
And brave Bouquet red terror did dispel.

Colonial jealousy and greed arose,—
Virginia, Pennsylvania claimed the land,
And erstwhile friends were soon arrayed as foes,
While man against his neighbor raised his hand.

Here Revolution's brave defenders gave
A service that has ne'er been fully told,
Mid sufferings and horrors dire, to save
From tyranny and hateful greed of old.

'Twas here Rebellion first its banner reared
Against the nation's might and sovereignty;
But Insurrection, boldly planned, though feared,
Gave way on show of force, and ceased to be.

Thy tide, old river, long did bear the boat
Of models varied, year succeeding year,
Pirogue, bateau, flatboat and keel, to float,
Mid toil with pole and surge of current's sheer.

A most ambitious project soon was planned:
To build and load and send, with sails first furled,
Sea-going ships with products of the land,—
The stream was linked with commerce of the world!

When Fulton's steamboat yet was something new,
Monongahela bore one of like sort:
The staunch New Orleans, with her hardy crew,
For parlous voyage to the distant port.

Soon others followed, till in later days
The building of such craft in volume grew,
With total of production to amaze,—
Naught like it elsewhere all the country through.

While boats in hosts were sent to other parts,
The waters of the natal river bore
Its portion, growing till at length here starts
The commerce of a nation great to pour.

The channels of the river primitive
Inadequate for this great task soon prove;
So sturdy dams and locks effective give
Their mighty aid the traffic on to move.

The hills that border on the flowing stream
Their riches of the ebon diamonds yield.
In mills and factories they glow and gleam;
From winter's rigors myriad homes they shield.

The river's banks are rimmed with roads of steel,
Vast industries their varied products pour.
Then boldly, loudly let the challenge peal:
Naught parallels it all the wide world o'er!

So, river of historic fame, the homes
Of divers races from thy shores are gone;
Thou theme of Muses' verse and storied tomes,
Thy denizens all die, thou flowest on!

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For reasons that are obvious the word Monongahela is not indexed except in cases in which it is part of a title of something other than the river and where descriptions pertain to some particular features of the stream. Likewise Pennsylvania is not indexed, with same exception.

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2. The second part of the report deals with the specific results of the work. It is divided into three main sections: the first section deals with the results of the work in the field of agriculture, the second section deals with the results of the work in the field of industry, and the third section deals with the results of the work in the field of commerce.

3. The third part of the report deals with the conclusions of the work. It is divided into two main sections: the first section deals with the conclusions of the work in the field of agriculture, and the second section deals with the conclusions of the work in the field of industry and commerce.

4. The fourth part of the report deals with the recommendations of the work. It is divided into two main sections: the first section deals with the recommendations of the work in the field of agriculture, and the second section deals with the recommendations of the work in the field of industry and commerce.

5. The fifth part of the report deals with the summary of the work. It is divided into two main sections: the first section deals with the summary of the work in the field of agriculture, and the second section deals with the summary of the work in the field of industry and commerce.

6. The sixth part of the report deals with the appendix. It is divided into two main sections: the first section deals with the appendix in the field of agriculture, and the second section deals with the appendix in the field of industry and commerce.

7. The seventh part of the report deals with the index. It is divided into two main sections: the first section deals with the index in the field of agriculture, and the second section deals with the index in the field of industry and commerce.

8. The eighth part of the report deals with the bibliography. It is divided into two main sections: the first section deals with the bibliography in the field of agriculture, and the second section deals with the bibliography in the field of industry and commerce.

9. The ninth part of the report deals with the list of figures. It is divided into two main sections: the first section deals with the list of figures in the field of agriculture, and the second section deals with the list of figures in the field of industry and commerce.

10. The tenth part of the report deals with the list of tables. It is divided into two main sections: the first section deals with the list of tables in the field of agriculture, and the second section deals with the list of tables in the field of industry and commerce.

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